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R. F. JOHNSTONE, Editor.

READ THE PROSPECTUS
of the
WEEKLY MICHIGAN FARMER
on the
First page of the Cover

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Institutions for Education in Agriculture.

The President of the State Agricultural College of Michigan, delivered the annual address before the State Agricultural Society of New York, at its fair held at Syracuse during the first week of October. The State of Michigan has laid the foundation of an institution for instruction in the Science and Practice of Agriculture; the State of New York is following in the footsteps of her younger sister, with a more slow and cautious step—probably learning something from the experience of Michigan, and realizing that such an institution is not to be matured in a single season, and that it cannot occupy a commanding position because it may be endowed with a high sounding name.

New York occupies a very prominent position as a state that has done much to aid in the improvement of Agriculture. From her issued the most prominent pioneer of the Agricultural press, and which first set the minds of farmers to the work of bettering themselves and their possessions. New-York also established the first Agricultural Society of note, and gave the impulse to that movement, which has covered the whole Union with agricultural societies, and annual exhibitions. The men of wealth of New York also have expended large sums in improving the live stock of the State; the Van Rensselaers, the Prentices, the Vails, the Sherwoods, the Morrises and the Thones, are names as familiar to every cattle breeder on the shores of the great lakes as to the tiller of the soil beside the Hudson or the Mohawk. Hence, if Michigan has taken the lead in one of the most important movements that has yet been made to promote the progress of agriculture and to elevate its followers, it cannot be supposed that farmers of New York would do otherwise than listen with attention to what might be considered the experience of one who had gone onward, beyond their view, but had been recalled to relate what he had learned, and what had been his experience. We cannot say that Mr. Williams entirely fulfilled what might have been expected. He said

a great deal, but he left a great deal more unsaid. All that part of the address which relates to the position which the sciences occupy in their connection with agriculture has been repeatedly laid down in reports, lectures and addresses, until it has become thoroughly worn out. There is nothing new to be said on that subject. But there might have been a great deal of interest created, if there had been some new expositions made showing the actual application of some of the sciences to the practical working or to the economy or arrangement of the estate which composes the College Farm. To this it might be replied it is too soon to be able to show results at the end of only the third term, and from a piece of land in such a condition as the college farm was when it first became part and parcel of an educational institution. But the farmer who goes upon his new eighty acres lot does not reason thus; he looks around at the end of the second year, and sees fields fenced and cleared, his house is built, his stock is increased, crops are harvested, and others are growing, and he can point to results of his labor and expenditure. Knowing this, he argues, here is the State Farm, with stock, with means, with its 800 acres, with its 80 or 100 hands, with its corps of professors, and the power and wealth of the State to back it up, yet it cannot point to results. Its progress is not a subject of congratulation, from the fact, it may be, that nothing is known of that progress. We looked for something of explanation, something that would show the practical working of the educational institutions of agriculture, and found it not.

In the relation given of the various institutions, established both in this country and in Europe, for the purpose of education in agricultural science, and the amount of instruction afforded by them in proportion to the population, the speaker was both suggestive and instructive, and we quote that portion of the address, as well worthy of being read, and generally known:

"And now arises the question. Are facilities for sufficient education within reach of the youth of the rural population? It is a vital question, not for you, not for this State only but for our common country and the age.

The whole population of the State of New York in 1850 was 3,097,394. Of this number about 16 percent were between the ages of sixteen and twenty-two, or nearly 500,000. Of these rather more than one-half were females, leaving, however, nearly 250,000 young men. There were only 2673 enrolled in all the Colleges of the State. Allow four times, six times, yea, nearly nine times as many to enjoy good advantages of education in advanced Schools and Academies, making the whole number 25,000, and then allow for the class so irremediably stupid, that they will not seek, and could not profit perhaps by education, and for those who possess such vitality and energy of mind as to overleap all barriers, and drink in education, as they live and move, 25,000 more, and you still have 200,000 of the young men

of New York, deprived of all education beyond that which the meagre Common School affords. It may be said that a large proportion of these youth, in such a State as this, reside in cities and towns. Very well! It only changes the argument, and proves the necessity of Industrial, as well as Agricultural Colleges for your communities. We have, or soon shall have, in Michigan, 50,000 young men, almost entirely among the rural population, destitute of means of acquiring such education, as their age and calling imperatively demand. I omit mention of females, because unnecessary to my argument. Female education of an equally elevating character, must keep pace, however, with that of the male population.

Do existing Educational Institutions afford relief? School officers will admit that the Common Schools, in the main reputable, are often a mere farce. Thousands of the young throw up their books in despair because they have outstripped their instructors and forego all further advantage of instruction.

The great *desideratum*, the great need is, a chance for the boy to aid himself. While at the Common School the boy works upon his father's farm. He earns his education as he proceeds. Labor is there honorable. But he can use his physical system to improve his brain in no wider sphere. Tens of thousands crave the chance to labor three or four hours per day, supporting themselves while improving their minds, but no opportunities are afforded. It may be said that High Schools and Academies are accessible, but it is obvious, that expense and distance render them unavailable to the mass.

Those who resort to the higher Colleges, even to pursue a scientific course of study, becomes, enervated, or at least indifferent to physical toil, and going there at an age when they are most impressionable, they are borne along in the irresistible current of opinions and sympathies prevailing there, and not one in fifty becomes a cultivator of the soil. Double, treble, quadruple, the accommodations of existing Universities, and they could receive but a mere fraction of the youth clamoring for education, if any suitable facilities were allowed them to help themselves.

A new order of institutions has therefore become an absolute necessity, where a student can, in part at least, educate himself, where his physical faculties are preserved in their full vigor and elasticity, and where those studies which are most useful to a cultivator of the soil shall be embraced, while those which are least valuable shall be discarded. To remedy this yawning deficiency, Agricultural and Industrial Colleges are organized in several of the States, and initiatory steps are taken in other States to establish them.

The Agricultural College of the State of Michigan has been in actual operation since May 13th, 1857. Its Faculty consists of a President and four Professors, and it has accommodations at present for 100 students. It was created in obedience to a requisition of the Revised Constitution of 1850, and organized under a law of 1855. The Farm consists of 676 acres. Its design is to unite physical with mental culture, to afford the student a chance to earn in part his own education, and a chance to apply himself, free of tuition, to those sciences and practical arts, that may render him a scientific farmer and an enlightened citizen. The effort has attracted anxious attention throughout the Union. Applications from other States and Canada have been made sufficient to fill the Institution. This is the first State Insti-

tution, and the only exclusively Agricultural one yet in operation on this side of the Atlantic.

The New York State Agricultural College was incorporated in 1853. Its creation was principally due to the energy and public spirit of the late lamented John Delafield, who was chosen its first President. After his death, the work was suspended. It was revived in 1856. The Farm, embracing 686 acres, was then purchased at a cost \$45,000, principally by subscriptions of the farmers of Seneca county. It is situated on an eligible and commanding position, stretching from the village of Ovid to Seneca Lake. A loan by the State of \$40,000, for twenty years without interest, is secured on 400 acres of the estate. Instruction in those sciences and arts, calculated to enlighten the farmer and illustrate his calling, is to be combined in its system of education. The Trustees have contracted for the erection of a portion of the main college building, to be completed in one year, for the accommodation of 125 to 150 students. Its available funds for the purpose, now consist of \$35,000, not so much as the cost of a single school house in many of your towns, a sum in sad contrast with the ostentatious exhibit around us of the agricultural capacities and wealth of your Empire State.

The Peoples' College at Havana, Schuyler county, in this State, was incorporated in 1853, and organized in 1857. Its charter contemplates a capital of \$250,000, which may be increased to \$500,000, of which enough has been subscribed to encourage the belief that the experiment will be fairly tested. The corner stone of the main edifice was laid on the 2d day of September last, and the Trustees announce their intention of opening the Institution within one year from this time. It should perhaps be designated as an Industrial, rather than an Agricultural College, for it embraces various kinds of manual labor in its plan, while the farm consists of but 200 acres of land. Labor is to be compulsory on both teacher and student, a plan, if successful, admirably adapted to prepare a new class of Professors, such as new Institutions of the age will demand. It contemplates a wide range of study, no less, in the language of its Charter, than "Literature, Science, Arts and Agriculture."

The Farmers' High School of Pennsylvania was incorporated in 1855. It is located nine miles south-west of Bellefonte, in Centre county, very near the centre of the State on 200 acres of land, the munificent gift of Gen. James Irvin. The farm, to which 200 acres have been added by purchase, is being brought rapidly into a high state of cultivation. Its resources consist of \$10,000 donated by the State Agricultural Society, \$10,000 subscribed by the citizens of Centre county, \$5,000 a bequest of Elliot Cresson, and \$25,000 appropriated by the State. The further sum of \$25,000 has been appropriated by the State on condition that an equal sum be subscribed by citizens. Its whole means, therefore, if the subscription is completed, of which no doubt remains, are \$100,000 and the farm donated by Gen. Irvin, estimated at \$12,000. One wing of the main College building is nearly erected, and the present design of the Trustees, is to open the Institution on the 15th of February next, with 100 students, to be increased to 400.

The Maryland Agricultural College was incorporated by the State in 1856, and \$6,000 per annum appropriated towards its support, provided subscriptions to the amount of \$50,000 were first secured. That object having been effected during the last win-

ter, the Institution was organized and the College located on a tract of 428 acres of land, purchased at Bladensburg, near Washington, from the estate of Hon. C. B. Calvert, the largest stockholder and President of the Board of Trustees. The corner stone of an extensive edifice was laid on the 24th of August last, and the design is to push the work to a rapid conclusion. Its educational plan proposes the development of the whole Man—moral, physical and intellectual.

The State Agricultural College of Iowa was incorporated in March last. The preliminary appropriations are \$10,000, and five sections of very valuable lands heretofore granted by Congress for erection of Capitol buildings. Localities vie with each other in offers of money or land to secure its location, varying in value from \$10,000 to \$25,000. It is to be fully organized and located in January next.

The Minnesota Agricultural College was incorporated during the present year. It is located at Glencoe, McLeod county. The farm consists at present of 320 acres of land. Its design, scope and principal features, as well as those of the Iowa College, closely resemble those of the Agricultural College of Michigan.

The Agricultural Colleges of Michigan, Iowa, and Minnesota, are state institutions. Those of New York, Pennsylvania, and Maryland, are the joint works of public spirited individuals and the respective States.

In anticipation of all these efforts, the Farmer's College near Cincinnati, Ohio, under the auspices of F. G. Cary, Esq., and other public spirited gentlemen, has for several years promoted the cultivation of the earth in conjunction with literary and scientific pursuits. It is, however, a Classical Institution, embracing other objects, and prescribed labor in the culture of the soil, is not a compulsory feature of its plan.

A bill establishing an Agricultural College is now pending before the Legislature of Ohio and will probably be reached at its adjourned session, the approaching winter. Its friends are not sanguine of its success. Whether it passes or not, the farmers of Ohio have 150,000 sons deprived of all possible means of education beyond the Common School.

The Legislature of Massachusetts, in 1856, incorporated a School of Agriculture, which must be dependent entirely on subscriptions for its future establishment. In 1850, Massachusetts, in advance of other States, appointed Commissioners to investigate the subject, and Prof. Hitchcock made an elaborate Report relative to Agricultural Colleges in Europe. A plan was recommended for Agricultural Education, but no effective action was taken on the subject. Two citizens of Massachusetts, Benjamin Bussey, of Roxbury, and Oliver Smith, of Hatfield, have made princely bequests to be used in some remote future contingencies for founding Agricultural Colleges, but available for no immediate use.

Efforts are being made to establish Agricultural Colleges also in Virginia, South Carolina, Alabama and Wisconsin.

Agricultural Professorships have been endowed in the Universities of Virginia and Georgia, by public spirited individuals, and also exist in several other of the Classical Colleges of the country. In Michigan, the University has such a Professorship. Scientific Schools of an elevated character have been connected with many of the older Institutions. These will all be merged in the several Institutions with which they are allied. Superior facilities will be thus afforded for a man already educated to acquire a bet-

ter knowledge of Agriculture, as an accomplishment, but very little is thus effected towards filling a deplorable hiatus in our Educational Systems.

It will be perceived that the enterprises in this country designed to meet the great necessity, are all in embryo. They are the initial attempts to satisfy an irresistible craving for an additional means of education. In Europe, however, Agricultural and Industrial Colleges are no longer an experiment. The neglect of our government stands in woful contrast to the paternal care exercised by the governments of Europe. We have no Department of Agriculture, not even a bureau of a department. Our government may expend in ten years, on the whole subject of Agriculture, as much as it would cost to build a first class steam frigate to sail around the world on pleasure excursions or rot in the docks. The Senate, during the last Congress, abolished its Committee on Agriculture, and thus before the world, ignored the subject. In France the subject is under the charge of the Ministers of Agriculture, Commerce and Public Works; in Prussia, a Board of Rural Economy, subordinated to the Minister of Agriculture, has control of the subject; in Russia, it is under the supervision of the Minister of Public Domains. The other nations of Europe generally take the subject under governmental patronage and custody.

In Prussia, Agricultural Education is perhaps best systematized. Prussia has 413 Agricultural Societies of different grades, all of which are affiliated together, and are subordinate to and report to the Board of Rural Economy. In all Germany, there are 1000 more such societies. Prussia supports fifty-one Agricultural periodicals. In all Germany there are eighty-nine such periodicals. Societies and Periodicals, as well as Schools are devoted to special objects, bestowing their whole attention to perfecting some single branch of culture. Prussia has five Agricultural Colleges of a high order, twenty-eight Elementary Colleges, and fifty-seven Special Schools for affording instruction in Horticulture, Flax Culture, Sheep Raising, &c., and seventy two Model and Experimental Farms. But the supervisory functions of the Government do not end here. It aids in the dissemination of the best seeds and best machinery for Flax culture. It distributes cuttings and seeds of the mulberry and reeling and other machinery to promote Silk culture. It promotes Pomological culture in the same efficient manner. So it encourages the propagation of the best breeds of Horses in different parts of the kingdom. Draining engineers are detached to instruct the people, indicate the proper channels drainage, systematize it in the most economical manner. Lessened annual expense of the public roads, and improved general health, and increased production of the kingdom are the ample remunerations to the Government.

In France there is an Agronomic Institute, on a portion of the premises of the Palace of Versailles. There are three Imperial Colleges of Agriculture of a superior kind. There are eighty-six lesser Schools, one in each of the departments. There are also Polytechnic and Industrial Schools of a somewhat kindred nature. To the three National Veterinary Colleges, I have already alluded.

Russia appreciates the importance of stimulating Agriculture as the sure foundation of prosperity and her colossal power. Her efforts are comprehensive and vigorous. The government supplies land for various tests and experiments. Importation of implements free of duty has been allowed. Fairs are

held in districts of the empire, and statistics are published at the public expense. Periodicals are published and gratuitously distributed, particularly among the clergy, that they may become missionaries of Agriculture as well as the gospel. Special schools are established for rearing of Horses and Sheep, for culture of Flax, Silk, &c., and for the study of epidemics among cattle. A garden of an hundred acres was established fifty years ago, near Odessa, on the Black Sea, for the acclimation of seeds, fruits and plants of southern Europe, and subsequently ten other gardens for similar purposes. Agents are dispatched not only over the empire, but to foreign countries, to obtain information and improvements for dissemination. There is one Imperial College at Gory Goretz, and eight other colleges are established in different districts of the empire, all well endowed, and each possessing an extensive Model Farm, the least of which is fifteen hundred acres. In addition to these, are numerous farm schools. A technological Institute for education of Mechanics, Chemists and Engineers is also established. Graduates of the higher institutions have been sent abroad to be better fitted for professors at home. The students in the eight principal colleges are educated entirely at the public expense, and when they graduate are supplied gratuitously with books, seeds and tools; yea, more, the most meritorious are supplied with farms near their native villages as rewards for their proficiency. An intelligent Russian informed me that if the Schools of Russia had done no other service than the eradication of superstitions and prejudices, their cost was well repaid.

Great Britain has established a system of Agricultural Schools for Ireland, but not for the rest of the empire. The principal Agricultural College in England is at Cirencester. It is designed for the gentry only, and is an expensive institution. The question may be asked, Why has England, the foremost country in Agriculture, the fewest schools? The reason is obvious. The landlord, the steward, the man of science, and the tenant farmer who employs the laborers, confer together on all proposed improvements. The landlord has the authority and the capital to execute their resolves. They are the Agricultural College. Thus science, capital and skill are called into requisition. Hence, the island presents a scene of unrivaled rural beauty, and groans under her abundant productions.

Austria, Saxony, Bavaria, Sweden, Wurtemburg, Belgium, and other nations of Europe, earnestly promote Agricultural education.

The first institution of the kind in Europe was at Hofwyl in Switzerland, founded by Fellenberg, a name illustrious in the annals of education. The model school, perhaps, of all Europe, is that of Hohenheim, in Wurtemburg. The other most remarkable colleges are Cirencester in England, Grignon in France, Molin in Prussia, and Gory Goretz in Russia. In 1850, Prof. Hitchcock enumerated 352 Agricultural Institutions in Europe, but he omitted those in Sweden, and some other countries. They have been greatly multiplied since that time. I think there are now 500 Colleges, Schools and Model Farms in Europe, mostly the creation of the last twenty years. Their success is no longer in controversy. Neither prejudice nor ignorance is allowed to crush them. They are regarded as a great and beneficent agency, which governments, in the exercise of a benignant guardianship, are bound to exert, in increasing the productions of the earth, and promoting the welfare of the race. They appreciate the

great fact that the surest way to promote the prosperity of the State is to enlighten the individual and multiply his energies. I can only make an approximate estimate, but there are probably employed in all the schools of Europe at the present time, 2000 professors and teachers, and 50,000 students are in attendance upon them.

I have said nothing relative to the course of studies, the discipline, or the plans on which the European schools are conducted. It is sufficient to say the design of them all is a mastery of the physical sciences and practical arts that bear upon Agriculture, and the harmonious union of study with labor. Their institutions, however, furnish no models for us. The lower order of schools in Ireland and Russia are for the peasantry, and of a grade not elevated enough to prove useful in this country. The best of their colleges are designed for the education of stewards, agents and teachers, and not for proprietors who labor with their own hands, and who combine, like our countrymen, all the characteristics of landlord, tenant and laborer in the same man.

The objections to such institutions in this country will be numerous, in spite of the necessity for them. The first question asked is, "Do you expect to liberally educate the whole mass?" That is impossible. But a large proportion, ten times as many as now are, can be highly educated. Large numbers can be rendered intelligent citizens, capable of performing all their several duties, and lingering prejudices can be eradicated from their minds.

The assumption will be made that if we need one school, we need an hundred. That is true. But they are novel. They must be built up gradually. No sufficient teachers can be obtained. I doubt whether instructors could be had for ten colleges in the whole State of New York. No plans can be thoroughly successful, till a new race of men are educated in these very colleges, for Professors and Teachers.

The general objection urged with a singular dogmatism, is, that labor and study are incompatible. It is not so in tender boyhood, where the boy actually performs drudgeries, while mastering the rudiments. It is not so in mature manhood, where hundreds of men not only labor, but support families, and acquire funds of knowledge while engaged in manual toil. There is a Senator in the Congress of the United States, who was taught to read and write after he was of age, and after he was married. **GEORGE STEPHENSON**, the great English engineer, began his career as a brakeman, married young, and made nearly all his mental acquisitions while pressed down by crushing labors. Indeed, courage, thought, labor, and study, severe and unremitting, are the only conditions of lofty success to the mature man. Why then this assumption, that labor and study are incompatible just at the very period of life, when the body is most vigorous, and the mind most free from anxiety? It originates in a diseased public opinion. It continues to exist, because no philosophical plan of combining labor and study has had a fair trial.

It is true, that Manual Labor Schools have generally been unsuccessful. The causes are evident. They have often withered under the frowns and incredulity of the public. Often the labor selected has been confining, and fatiguing toil, by no tie connected with any pursuit in which the heart was enlisted. Often too, labor has been elective, one portion of the students working, while others were exempt. Castes were inevitable from such incongruity, and

the death of such an Institution was almost coeval with its inauguration.

The Institution in Michigan has been in operation about eighteen months. Labor is there compulsory on all. So far, all the labor has been cheerfully performed. Opinion among themselves has a powerful influence in holding each student to a manly performance of all his duties. Generally those who are most faithful in study, are foremost in their sports, and foremost in their work also. So too, fidelity does not depend upon the fact whether a young man comes from town or country, but upon his energy and intrinsic manliness. There is no shrinking from duties, even those which are most offensive and most severe. The farm was located in a forest. Lands have been reclaimed by the students, such as are generally neglected as irreclaimable. For eight months, except students and those in official positions, but a single man, and he the porter of the kitchen, has been regularly employed on the estate. All the repairs in wood are done by the students. Clearing and ditching, planting and harvesting has been done by the students. All the teams and stock are in the daily charge of the students. A bridge has been laid out, and erected by the students. Circumstances a short time since, deprived us of every person employed in the culinary department. With the aid of three or four persons the students performed all the duties connected with that department for more than a fortnight. Had the Institution been deprived of all external aid, the meals would have been well prepared, and punctual as usual, and the spectacle would have been presented, of a College of Students and Professors, entirely self-reliant and independent. So far, this is compatibility of labor with study. I recently saw an assumption in a public paper, that if thirty institutions were started for the purpose, and the compatibility of labor and study was established in a single one of them, success would be a full remuneration for the cost of the whole. I would not assume that it is proved in Michigan, but I assume that in spite of most formidable obstacles, it is rapidly being demonstrated.

The Institution has met with trials and misfortunes. It should have located on land thoroughly subdued, already a model farm. An experiment sure to encounter the numberless difficulties inevitable to all new enterprises, and sure to incur malignant opposition from without, should have been placed where all labor could be made at once interesting and attractive. As it is, the Institution is compelled to suffer all the risks, toils, trials, and diseases, this year sweeping and afflictive, of a new country, such as break down the constitutions, crush the spirits, and abridge or destroy the lives of the first generation of pioneers. It may therefore yet fail, and prove a disastrous experiment. But the philosophy of the plan, in many vital points, is no less vindicated.

Another fact is already established in the Institution, that the student makes more rapid intellectual progress than though he performed no labor at all. The invigoration of body re-acts upon the mind, inspiring it with new power. This should be, and proves to be a natural necessity.

It has been urged against such Institutions, that they will be mere receptacles of the sons of the rich, sent there to become familiarized with labor and the use of tools. The exact reverse is the primary design. The chief object to be kept in view, is to enlighten the toiler with the truths of science, that the man who works with the hands may think with the brain.

In our experience, the very class who were destitute of early advantages have sought the Institution most eagerly, and best appreciated its advantages. A system of labor has been harmonized with a system of study. The students are credited with their labor three hours per day, and assessed with their board at cost. The balances are struck each term, and inconsiderable as these balances are, many students have been compelled to leave, and abandon further hope of education, because unable to pay them.

We have discovered that great benefits result from attrition and constant discussion among the students. The farmer employed on the estate, before he had been there six months, declared that he would not part with the knowledge he obtained, for a thousand dollars. The continual exercise of mind, and comparison of opinions, has disclosed to him the nature of the fatal blunders which young farmers commit, and taught him how they might be shunned.

The assumption is made, that a man can learn nothing practical in such a school. That depends upon the discipline. Our experience is, that acquisitions are very rapid in this respect. But allow that a young man learned little in mere handicraft, the collateral education will far more than repay the cost. His superior English education, his improved physical capacities, his superior knowledge in regard to food for his family and his stock, and the preservation of health, his general readiness and capacity in mastering business, and executing public trusts—all these acquisitions are invaluable, and cannot be earned by the exercise of his own faculties in any existing Institution.

I met a man last year, who exultingly declared that there was but one way to hoe, but one way to plough, but one way to harvest, and books and schools were therefore futile. Fifty years ago, when the traveler was seven or eight days in making a voyage from New York to Albany, in a crazy sloop, there was but one way to travel. Before Arkwright's spinning jenny, there was but one way to spin. Before Prof. MAURY published his Theory of Winds and Currents, there was but one way to sail. The voyage from New York to San Francisco, which would formerly have taken six or seven months, has been performed in less than ninety days. Twenty years ago there was but one way to communicate with London. It took three months. The practicability is now proved of dispatching a message from London after breakfast, and have it arrive in New York before daylight. If there is but one way to farm it, that is a very poor way, which affords an average crop of less than eleven bushels of wheat per acre over such a country as we possess.

This same friend called my attention to a Pennsylvania German, who could hardly read and write, and had a great contempt for papers and books on farming, but was the best farmer in his neighborhood. I told him that I thought this basket would not hold water, and that this model farmer owed everything to the spirit of improvement abroad. His plough was a Troy plough, instead of the old shaky implement, with wooden mould board sheathed with iron, with straight handles tipped with cow-horns, which he used when a boy. His implements were mostly light, graceful, elastic ones, of recent patterns. His fruit was budded and grafted from such as his neighbors had imported from the best nurseries. Whatever superior cattle, or sheep, or swine he had, were obtained from neighbors at no extra cost. The nails he shingled his house with cost but one-third as

much as those which his father used. When he got up in the morning, he lighted his fire in a second with a friction match, instead of tugging ten minutes with a flint and steel and tinder box, and he complacently composed himself to sleep at night under sheeting that cost eight cents per yard, as good as that which cost fifty cents when he was a child. The story is told of Plato, that having described man to be a biped without feathers, Diogenes, the cynic, laid a plucked rooster before him and exclaimed "Behold Plato's man!" If our model farmer was deprived of all the benefits he had derived from that progress which he despised, if he was stripped of all borrowed plumes, he would be as innocent of feathers as Plato's man.

It is objected that graduates will come forth from such colleges crammed with all sorts of visionary notions and theories. The design is to effect the contrary result. It is to teach men to subordinate experience, and books, and speculations, to great natural laws, to learn and acquire the tests by which truth can be sifted from error. Let me illustrate. You will hear men even at this day, defend the custom of wintering animals under severe exposures, rather than stabling them. It is an established natural law, that vital heat is created by contact of carbon of the food with the oxygen of the air, existing in the system or inhaled into the lungs, and that the more heat is demanded by exposure, the more waste of the animal, and the more ravenous consumption of food. Natural law, then, as well as economy and humanity, enjoins that cattle should be wintered in clean, comfortable, well ventilated buildings. Experience and argument, weigh nothing against a natural law.

But I cannot follow these objections further. The earth revolves in its orbit in obedience to law. The stone I throw into the air falls in obedience to law. The circulation of the blood and the operation of the human functions, are governed by law. Every thing blooms and decays on the surface of the earth, in obedience to immutable laws. It is the province of science to discover and elucidate those laws. It should be the province of agricultural education to master and enforce them. The work before us, is a great and significant movement—it may affect the welfare of millions. All that is anticipated by sanguine men may not be realized: Something may be done to substitute intelligence for ignorance, energy for luck, health for disease, and science for chance.

Institutions of the kind may fail. I think many of them will fail. I understand that your own Institution, even in its infancy, has been subject to calumnies and criticisms, calculated to benumb public sympathy, and paralyze the energies of its friends. There will always be narrow-minded men, who will gloat over every misfortune, every mistake, and every failure. Nothing short of inspiration will save men from errors. But should an hundred Institutions fail, there yet stands your 200,000 young men in New York, and eight or ten times as many in the whole Union, panting for education. There they remain with minds to educate, and physical capacities adequate to earning an education, if chances were afforded. No facilities will be provided for meeting a recognized demand of the age. When I say all this, I do not mean to deify the Common School nor the University. "To the end that learning may not perish in the graves of our fore-fathers, be it ordained that a Free School shall be maintained by every fifty families." Such was that early and significant ordinance of the Pilgrim Fathers, which has performed

ed so invaluable an agency in the promotion of civilization. I was born almost within bearing of the wintry surges that beat upon Plymouth Rock. I was educated in one of the most venerable Institutions of New England, where I could look out from my window, and see that majestic shaft rising upon Bunker Hill, a perpetual monument to the intelligence, as well as the valor and patriotism of our forefathers, and I shall never cease to appreciate and defend all those Institutions of learning, which I was taught to cherish around those hallowed spots. But another and an additional agency is now demanded, for the education of the *new man*, whom our political condition has created, in the use and conversion of the new modern physical sciences, to the highest purposes of progress and civilization, a range of study not possible, and never contemplated, when the existing University was developed.

But it is no holiday business, to establish such an Institution as I have foreshadowed. The farm, buildings, laboratory, library, museums, stock and implements, must cost a large sum. It must be carried forward as an important public object, and enlist general sympathy and support. What shall be the chief features of such Institutions, what their matured organization, and what the most eligible course of studies, time must determine. It is with diffidence therefore that I give a mere skeleton.

Students for admission should pass a good examination in the branches taught in the best common schools.

The course of study should extend over a period of four years at least. It should embrace a mastery of the English language, Mathematics, Civil Engineering, Chemistry, Animal and Vegetable Physiology, Entomology, Botany, Geology, Mineralogy, Meteorology, the Veterinary Art, Horticulture, Political Economy, Constitutional Law, Book Keeping, and the Application of Science to the Mechanical Arts.

Testimonials or Diplomas should be given to those who pursue a full course.

Tuition should be free to all, except to those who do not intend to pursue the life of a farmer, or who enter to remain for a limited period.

The Farm should be in as complete a state of preparation for use as the lodging rooms, books, laboratory, or black board.

The first Institution in a State should have a full corps of Professors, and the Instruction given should be comprehensive and thorough.

Institutions should be endowed on a permanent and independent basis, that they may be "good enough for the richest, and cheap enough for the poorest.

Impressed with the necessity of more liberal aid than private individuals or capricious State Legislatures would be likely to afford, and feeling that in their infancy they must be independent of popular prejudice or bigoted opposition, earnest friends have looked with confidence to the General Government for adequate grants of the public domain for endowments. It seems fit that Institutions, the success of which must enure to the national benefit, should be a subject of national encouragement. Accordingly the Bill introduced by Mr. MORRIL, of Vermont, and sustained by an impregnable array of facts and argument, in a speech delivered by him, and Mr. WALBRIDGE's Report from the minority of the committee on Public Lands, passed the House of Representatives at the last session, by a majority of five votes. Seven members of the House from the State of New

York voted against it. It now awaits the action of the Senate at the approaching session. The bill proposes to grant to the several States, "for the benefit of Agriculture and the Mechanic Arts," 20,000 acres of land for each Senator and Representative, to which each State is entitled. Ten per cent of the grant can be used for the purchase of farms, but none of it can be converted to the erection of buildings. By reference to the latest Report of the General Land Office, it appears that we recently possessed 1,088,792,498 acres of unsold public domain. The grant proposed by the bill in question does not amount to two-thirds of one per cent. Can any one doubt that our great landed inheritance would be enhanced in value ten times that per centage, by the creation of a cordon of colleges throughout the States, where those studies are taught which conspire to render men more enlightened tillers of the soil. From a report in 1854, it appears that an aggregate of 4,080,704 acres of land had been granted to fifteen States of the Union, for the endowment of Universities. More than 60,000,000 of acres have been appropriated to the establishment of Common Schools. It seems to have become the unquestioned policy of the Government to set apart a portion of the Public Lands, as a sacred fund, for the education of men, who and whose posterity are to inhabit them. Surely if it is a legitimate use of the lands, to devote them to the promotion of Professional and Classical learning, for still more powerful reasons, justice and expediency demand a share of them for instruction of men in those Sciences and Arts, which bear directly upon Industrial and especially Agricultural pursuits. We support two National Schools for instruction of men in the Arts of destruction. Let something be done for the support of schools for instruction in the arts of production. Public sentiment seems so irresistible in favor of this measure, that we may rationally hope for its success, and the consequent liberal endowment of one Industrial or Agricultural College at least in each of the States of the Union.

A few Words about Pig Feeding.

At this season many of our readers are doubtless engaged in earnest attempts to fatten their store hogs, we therefore consider that a few remarks on the subject will not be inappropriate. There are few who ever try experiments on the feeding of their hogs: these animals are seldom weighed so that we can learn how much their increase costs; neither is the food itself either weighed or measured. The general practice is to have the hogs run out in pasture or in the stubble till the time that pumpkins and corn get ready to harvest. Then they are shut up in their pens, which are generally adjacent to the corn crib; and from which they are supplied with the nubbins of corn first, and such slop food as may be convenient. Frequently the corn crib is over the hog pen, and there are convenient holes made in the floor, by which, any quantity of ears may be shoved down with the foot. The hogs with this treatment lay on flesh reasonably fast; but as to how much corn is consumed, or how fast a given weight of pork is made, the hog himself has just about as reasonable a knowledge as his owner. We, therefore, are told frequently that hogs don't pay for their keeping;

but when the amount of loss created by them is inquired after, no satisfactory reply can be obtained.

That it is possible to have hogs of nine or ten months old weigh from three hundred to three hundred and fifty pounds has been demonstrated over and over; and few seasons pass without having to record at least one or two instances of this rapid growth which is considered the evidence not only of good feeding but of a profitable outlay. A hog that weighs 300 pounds at the end of nine months has increased at the rate of a pound of pork per day. In these weights we refer to the dressed hog, which at the present price is five cents. A litter of eight pigs of equal size at the same age, and making each an average growth of 200 pounds in nine months, would make for the owner just forty cents per day. But this would be an extraordinary and unusual growth, and is only seen in a few cases where one or two hogs have had extraordinary care. The more general rule is to have the shoats at six or eight months old, weigh but 150 to 200 pounds, live weight, to keep them in fair growing condition through the next winter and summer, and then to put them up to feed when they are about eighteen months old, and after fattening for two months, kill them, at a weight ranging from 350 to 400 pounds dressed. A litter of eight hogs thus kept for twenty months and which would average 350 pounds each, at the end of that term, would have netted the owner only twenty-one cents per day for all his care and feed. It is true that during the first six months the hogs literally cost nothing, or at least only their pasturage in a clover field, or on the stubble after harvest, but there are six winter months when they must be fed and taken care of, and then if turned out, they have to be fed partially during the succeeding summer months, if they are to be kept in a growing condition. There are then two months at least where they would have to be fed with care and regularity. Now it is evident that the smaller sized earlier maturing hog is really in all sections where the culture of the farm, and labor is economized, the animal that returns the most profit. Hence the improved Suffolk with a cross of Leicester or Berkshire or Byfield, not over a quarter on the maternal side, is found a very profitable animal. The Essex which we have had amongst us, as yet have been in such demand for breeding purposes, that there are no statistics kept to show to what weight pigs of this breed will attain in a given time, when kept with the purpose of testing the amount of pork they will make.

In a series of experiments on the feeding of pigs, made by the eminent English agricultural experimentalist, J. B. LAWES, in 1852, he has shown that different kinds of food make a very great difference in the increase of the hog. For instance a pen of three pigs about four months old, which weighed together 449 pounds, when fed on 62 pounds per week

of bean and pease meal, gained in eight weeks 303 pounds; whilst a pen of three pigs of like weight and age, which had only 52 pounds of the bean and pease meal, and 14 pounds of Indian corn meal, gained in the same time 336 pounds. A third pen of pigs of the like age and size fed as much of the bean and pease meal as they would eat, or 40 $\frac{1}{2}$ pounds, and 14 pounds of bran per week, only gained 200 pounds in the eight weeks. A fourth pen of pigs of the same age and weight, as were all the pigs that were experimented upon, fed entirely on as much Indian meal as they would eat, which was at the rate of 45 $\frac{1}{2}$ pounds per week, at the end of the eight weeks had gained but 221 pounds. A fifth pen, of pigs, which was allowed as much Indian meal as the animals would eat, and which consumed at the rate of 44 $\frac{1}{2}$ pounds per week, had 12 pounds of bran added, and they increased 309 pounds in the eight weeks. Another pen fed in the same way upon Indian meal, and consuming at the rate of 36 $\frac{1}{2}$ pounds per week, but allowed besides 14 pounds of the bean and pease meal, and 14 pounds of bran, gained in weight 347 pounds.

Where the Indian meal was fed alone, there was 25 pounds per week consumed by every 100 pounds live weight of pig; and every 100 pounds of Indian meal made an average increase of 20 pounds in weight, or at the rate of one pound of live hog to every five pounds of meal. Bran did not act so efficiently when employed for feeding purposes, as but 23 pounds were consumed by every 100 pounds live weight; and 100 pounds of bran only returned 11 pounds of increase, even when four pounds of bean and pease meal were added to the bran.

In another trial of a pen where 2 pounds of cod-fish were added to every 28 pounds of Indian meal, an increase of 22 pounds was obtained for every 100 pounds of food consumed.

These experiments all go to show that corn alone is not so profitable, as when other kinds of highly nitrogenous food is mixed w.th it. There is also another important conclusion deduced by the experimenter. This was that where the progress of the animal in fattening was rapid, there was a large decrease in the consumption of food per 100 pounds live weight, in some cases reaching to nearly one one third saving on the amount of food; whilst in the pens that fattened more slowly, there was very little decrease in the average consumption of food as measured by the hundred pounds live weight of hog. For instance the pen of hogs that gained 320 pounds in eight weeks began by consuming 39 pounds every week for each 100 pounds of their live weight, but had fallen down to 25 $\frac{1}{2}$ during the last 2 weeks, of the eight; whilst the pen that gained only 114 pounds in eight weeks, being fed on a mixture of 24 pounds of bran and 2 pounds of Indian meal to every 100 pounds of live weight, actually consumed rather

more at the end of the eight weeks, than when they were put up. This would seem to give the conclusion that quick feeding was the most profitable.

From these trials also it is shown that a pig weighing 140 pounds when fed only on as much Indian meal as it would consume, gained 96 pounds in the eight weeks, or on 45 lbs. of meal 12 pounds of live weight, or at the rate of 15 pounds per bushel of 59 pounds. Some hogs however do not increase so rapidly as this, nor appear to have the ability to manufacture pork out of meal so rapidly.

A Pennsylvania farmer writing to the *Tribune* on this subject, states that five hogs weighing 249 pounds, consumed in thirty days 279 pounds of corn and cob meal boiled into mush, and that they gained 87 pounds in live weight. In 32 days after the same hogs consumed 375½ pounds of the meal, gaining 75 pounds in weight. Here is an experiment similar in point of time to that of Mr. Lawes in England, and both show results somewhat alike. In allowing the corn and cob meal at the rate of seventy pounds for a bushel of pure corn meal, we have a gain at the rate of 16.8 pounds for every bushel of 56 pounds, or at the rate of 30 pounds for every 100 of corn. But in this it must be noted that the ground cob aids very much. In another experiment, the same writer, with a choice lot of "Chester pigs" fed partially on corn and cob meal, scalded, and partially on whole corn, found that a gain was made of 17.44 lbs. on every 56 of corn; but he adds, "the above surprising gain was the result of very careful feeding, clean and warm bedding, and a tight house."

We quote what Mr. Lawes says of his trial with Indian meal alone as a food for fattening pigs:

"In Pen 5 the Indian meal was given alone, ad libitum of course. One of the pigs on this food gained more than 2 lbs. a day during the first fortnight of the experiment; but the other two only about half as much. Before the end of this first period, however, it was observed, that this fast gaining pig, and one of the other, namely, No. 3, had large swellings on the side of their necks; and that at the same time their breathing had become much labored. It was obvious that the Indian corn meal alone, was in some way a defective diet; and it occurred to us, that it was comparatively poor both in nitrogen and in mineral matter,—though we were inclined to suspect, that it was a deficiency of the latter, rather than of the former, that was the cause of the ill effects produced. We were at any rate unwilling so far to disturb the plan of the experiments as to increase the supply of nitrogenous constituents in the food; and accordingly determined to continue the food as before, but, at least, to try the effect of putting within the reach of the pigs, a trough of some mineral substances, of which they could take if they were disposed. The mixture which was prepared as follows:—20 lbs. of finely sifted coal ashes, 4 lbs.

of common salt, and 1 lb. of superphosphate of lime. A trough containing this mineral mixture was put into the pen at the commencement of the second period, and the pigs soon began to lick it with evident relish. From this time the swellings or tumors, as well as the difficulty in breathing, which probably arose from the pressure of the former, began to diminish rapidly. Indeed, at the end of this second period the swellings were very much reduced, and at the end of the third they had disappeared entirely. No. 1 pig, which increased the most of the three during the first, third, and total periods of the experiment, it is seen only gained 6 lbs. during the second period; he was, however, during that time the worst affected by disease as described above. As, however, his apparent increase was so great during the first and third periods, it is probable, that part at least of the deficiency in the intermediate period, was due to some temporary circumstance connected with his health, owing to which the contents of his stomach, &c., were unusually small at the time of his second weighing. The other two pigs in this pen give considerably less total increase than No. 1, but their rate of progress is comparatively very regular: that of No. 2 is singularly so; and No. 3, which was one of those affected by the swellings, nevertheless gives a gradually increasing rate of gain from the commencement up to the end of the experiment. We shall find too, further on, that the animals were satisfied with less of this food, though so poor in nitrogen, in proportion to their weight, than, with one exception, of any of the others; it will also be seen, that in spite of the comparatively small actual increase it is, in reality, somewhat high, when calculated in relation to the amount of food consumed. Nor could the quality of the meat have suffered much; for a dealer in pork, with a practised eye, selected and purchased the carcass of one of these pigs which had been diseased, from among the whole 36, after they had been killed and hung up. With these observations we may leave the result of this curious experiment for the present; but, before closing our statement of the facts of it, it may here be remarked, that, of the mineral mixture described above, 9 lbs. were consumed by the 3 pigs during the first fortnight of its use, 6 lbs. during the second, and 9 lbs. during the third."

The State Agricultural Society and its Rules.

ED. FARMER:—Pardon me for saying, I think you are a little wild and visionary in the views you expressed in the last *FARMER*, respecting first prize animals being allowed to compete from year to year. You say, on page 327, "they *can* compete, and if judged worthy, or superior, may be awarded the first premium, which the rules prescribe, shall be a Diploma." How does this agree with the rule which says, "Animals and implements having received the

first premium at a previous Fair, if considered superior, may be awarded a Diploma, but cannot compete for a first premium in the same class?" If the Society intended the Diploma for the first premium, why did they not say; "For the best Durham bull, a Diploma; for the 2nd best, \$10"? If think, if it was generally understood, that first prize animals were allowed to compete from year to year, the tendency would be to discourage individuals from exhibiting their stock, whereas, the object of this rule is to encourage the exhibition of stock and implements, by holding out the idea that first prize animals and articles shall not be brought in competition with them. It is practically saying, sirs, you have been awarded the first prize; you must now step aside and give others a chance—the very same rule that is practiced in our schools; where the scholar, who leaves off at the head of his class at night, must go to the foot, and give others an opportunity of being first.

I believe it has been the uniform practice with all exhibitors of first prize animals—where they meant to be honest—to merely enter them for a Diploma, having it so stated in the entry and on the card; and not to bring them in competition with other animals in the same class for a cash premium.

Allow me here to allude publicly, to the subject heretofore discussed by us privately, of the award made at our late Fair, to a lot of four pigs exhibited by Doct. A. A. Gardner of Northville, and then to two of them separately. I must still insist, that these awards were made in violation of the rule which says; "No animal or article can take more than one premium, except as *specially provided*." I do not wish to be understood as casting reflections upon the viewing Committee, for they acted under instructions, nor upon the Doctor, for he was told he could enter his lot of four pigs and then enter each one separately. J. C. Holmes, our former Secretary, writes me that the above rule was adopted to prevent such awards being made; and that the same difficulty existed with the old Detroit Horticultural Society, until it was settled that single varieties of fruit could not take a premium and then take another in a collection. The collection must be one thing, the single varieties another. The Secretaries of the N. Y. and of the Ohio State Agricultural Societies also inform me, that no such awards are allowed by their societies. They, in common with us, permit animals to compete singly, and then in herds; to compete with foreign stock; and working cattle and steers to compete for the premium on "trained cattle and steers." But in all these cases, there is a *special provision* of the rule; a *special premium* allowed; and a *special Committee* appointed. But if this is the proper construction of the rule, why not make it general? Read the premium List all through, and you will find that it can only apply to

grade pigs. Does this class of animals need so much encouragement, that the Society will pay five premiums on four pigs? Had I known that this was the rule, I think I might have made a hundred dollars more by the operation since I have commenced exhibiting swine.

It is not from a censorious disposition, nor yet from any personal grievance that I allude to this subject; but simply, to show the necessity of a thorough revision of the rules and premium list of the Society.

J. S. TIBBITS.

Livonia 15th Nov. '58.

Our correspondent is fully pardoned for his thoughts about us, and we are pleased to have him take up the rules and regulations of the State Society and discuss them. We hope that other practical men will do the same. They shall have full licence to speak out their thoughts, whenever they do not take up too much of our space, and whilst they stick to the text, what ever that may be. The improvement of the rules and of the premium list of the State Society is a subject that deserves, general attention, and we second the suggestion of our correspondent most sincerely.

There are two subjects treated in the above letter. The first refers to the rule which now precludes aged animals that have taken a first prize from competition. Our correspondent has stated the rule of the Michigan Society correctly above, and in referring to its effect in a previous number, we should have said that the rule was wrong, and first class animals should be able to compete, instead of asserting that a first class animal "can compete," to which the exceptions of our correspondent are taken.

Before discussing this subject, however, let us note what is the practice in other states. The rule of the New York State Society is:

"Prize animals at previous exhibitions, will be allowed to compete for prizes; but they must receive a higher prize or in a different class to entitle them to a premium."

The rule of the Ohio State Board of Agriculture is: "No premium will be awarded to any aged animal, which has received the first premium in the same class at former State exhibitions, either of this or any other State, provided always that all may compete for sweepstakes."

The rule of the Pennsylvania State Society is the same as that of New-York precisely. The rule of our State Society is: "Animals and implements, having received the first premium at a previous fair, if considered superior, may be awarded a diploma, but cannot compete for a first premium in the same class." Now we think, and in thinking thus we may be "wild and visionary," but are not aware of it, that the rules of Michigan and Ohio are framed more to promote a division of the premiums "all around," than to advance the improvement of stock. Still in

Ohio we must recollect the sweepstake class provides a position where aged animals may compete, whilst in Michigan there has been no such class. The rule of New-York and Pennsylvania if construed aright is better, but is not quite definite enough.

Let the practice under these rules be examined. And first we totally disclaim that it is the object of a State Society to practice upon the principle set forth by Mr. Tibbits, and illustrated by the unjust malpractice of an ill arranged common school.—

The principle upon which a State Society should act, ought to be that which will promote improvement, and elevate the standard of production. Under our rule a breeder imports or raises a Shorthorn bull of superior qualities, the animal is taken to the exhibition of the State Society, and we will suppose that he wins the first prize in his class each year till he is five years old when he enters among the class of aged bulls. When he comes to maturity we are told that *he can no longer compete*. Why should he be debarred of this privilege? The Society have set their stamp upon him, and pronounced him the best bull in the State exhibited that year only. Suppose next year that he comes forward on exhibition, and there are no other animals shown except those with which he competed the year before, should he be ruled out and the first premium be awarded to an animal that, according to all the rules of breeding, is second to him, and should that second rate animal be made his equal? Continue the same process for a third year, and by following the principle inculcated by our respected correspondent, and the Society would be obliged to award its first premium, to a third rate animal—for why? "Oh, because first class breeders must step aside and give others a chance"—a chance for what, why that second and third rate animals may be established by the State Agricultural Society of Michigan as first rate! Again, let us take another view. An aged bull or cow, has been awarded the first prize, at one of the exhibitions, the animal is almost perfect; the owner is proud of it, and of the skill that has produced it; he is willing to compete against all comers; his neighbor goes to Ohio or Kentucky or New York, and brings into this State, one that has won first prizes in either of those States, he puts his animal into the aged class, and he has the privilege of drawing the first premium, but is not permitted to compete with what has been pronounced first rate in this State, although that very animal may be the superior one. It is true that he may come into the foreign stock, if foreign stock be exhibited, but in this matter we are referring to competition and improvement at home. And still again, this rule as construed by our correspondent, not only works so as to place first, second and third rate animals on the same dead level, but whilst it impedes all progress, it is intended to prevent all com-

petition amongst the first class animals themselves. Once passed the ordeal, and stamped with first premium mark, they are beyond all criticism or competition; in fact they can snort disdainfully at their betters, and toss the opinions of the best judges as high as Haman with their horns. This is not the real intention of the rule, as we believe, but according to our correspondent it is, and he is one of the Executive Committee of the State Society and ought to know.

We say, this construction of the rule, though it has been practiced upon for years, in our opinion, is not correct, and this opinion is formed from the reading of the rule, and comparing it with the purpose for which the Society is formed. Suppose this rule read as follows: "Animals and Implements, having received the first premium at a previous fair, may compete, and if still considered superior, shall be awarded a Diploma as a mark that they have not been equalled or surpassed, but they cannot draw the first premium a second time." Would not this rendering of the rule promote the object that the Society desires to reach, which seems to be to guard against paying a cash premium a second time to the same animal as much as to promote a full show?

What is the Diploma intended to certify? Is it a mark of distinction? Is it to be used only as a testimony of the State Society that the animal was the best and superior? Superior to what? must it not be *superior* to every other article of the same kind exhibited in the same class, must it not also be superior even to the article to which has been given the first premium, because the "superior" article *could not compete*? If the rule be acted upon as it stands, ought not the diploma to be a mark of that continued superiority?

Let us illustrate this by a little more direct analogy than our friend's school practice; and in this we shall deal with facts. In 1836 Washtenaw Chief took the first premium as a trotting stallion, his time being 2.47; the next year, according to the rule he could not compete, though on the fair ground, and the horse to which was awarded the first prize was Thayer's Black Hawk, the time being 2.55. Again the present year the first premium has been taken by Fisk's Defiance, in 2.42, and next year it may be taken by a horse which shall not exceed 3.50, thus instead of elevating our standard of road action in the horse we may depreciate it each year, owing to the fact that our best standards are ruled out, and "cannot compete."

We believe it to be the policy of the Society to encourage breeders of stock to strive for perfection, and that when once an aged animal is pronounced worthy of the first premium at the State Fair, he should be the standard to gage others by, *if his owner is willing to incur the risk*, until he is succeeded by one at least equal if not superior. For though

animals may differ, in the perfection of points, yet taken as a whole, one may be fully equal to another, and as fully entitled to a first premium, without depreciating the qualities of the *first prizes* which may be his competitors. But to decide this must rest with the judges. Either that mock premium of a "diploma" should be stricken out, and first prize animals declared incompetent to compete; or the Society should declare by a specified rule what the thing is meant for, when awarded. If there is to be a class for aged animals that have never won a first prize in this State, then there ought to be a sweepstakes premium for animals of the same kind without restriction where they can be brought together without reference to prizes won. Let Young America have a chance to contest with the old champions!

The second subject in our correspondent's article is Dr. Gardner's hogs, and the question whether an animal can draw a premium as an individual and also as a member of a herd, team, yoke, pen or litter. We shall discuss this mooted point in the first number of the *WEEKLY FARMER*, and endeavor to consider it as fairly, as we have done the first subject. Meanwhile we shall be pleased to hear from others, as we have no disposition to claim infallibility on these important issues.

The Improvement of the Wheat Plant.

It is very evident that not only a more improved system of cultivation is needed in the growth of wheat, but also that we must raise new varieties if we would successfully combat with difficulties in its growth caused by the insects and the climate. The whole reliance of this State at present seems to be concentrated on the Mediterranean, except it may be on new soils, where as yet the accumulated richness of the soil is unexhausted, and the insect has not arrived.

Our old well known white varieties are not found to possess qualities which will enable them to resist the exhaustion of the soil and the introduction of the insect. The cultivation of the *Soule*, the *White Flint*, the *Hutchinson*, the *Blue Stem* is decreasing every year, and the question is suggested frequently, Can a variety be grown that will possess the hardness of the Mediterranean, and the fineness of quality of the varieties above named? We believe it can but to grow such a variety, a more intimate knowledge of the physiology of the plant is required by those who would experiment, than they generally have and also some experience in the art of hybridizing. To originate a new variety of wheat that shall be permanent, is no such easy matter. It is not a task to be performed in a single season, nor by an incompetent person. The whole skill of the most practiced horticulturist is required to originate new and more beautiful varieties of the rose, the tulip, the verbenas and many other plants that only delight the eye,

all the long years of experience in the open garden and in the conservatory, are not considered wasted, if a new and superior dahlia or camellia is produced, excelling to the eye all other varieties which have preceded it. But to produce a new kind of wheat, which will enrich the country, and repay the toil of the husbandman better than any of the old varieties, is left to chance, or to the unskillful manipulation of those who are generally incompetent, by experience or education to perform such an important service to the community.

That the same difficulty is met with even in Scotland, where science and practice is as thoroughly united as in any part of the world to promote agricultural improvement, we have the testimony of Mr. Patrick Sheriff, an eminent agriculturist, of Haddington, in that country. He writes to the *Agricultural Gazette*, as follows:

With the view of improving the Wheat plant, the following measures are suggested for the adoption of agricultural societies:—

"1st. To ascertain the characteristics and comparative merits of the varieties at present cultivated.

"Without a knowledge of the characteristics of the different kinds of Wheat, it is impossible to distinguish one from another, and their worth can be determined only by estimating their comparative merits. On this subject two farmers are seldom found to agree, and scarcely one of the profession seems to continue of the same opinion for many consecutive years. It is believed that no set of experimental trials with different varieties, made and repeated with such care as entitles them to be considered correct, have ever been submitted beyond vague conjectures. On an accurate knowledge of the worth of existing varieties depends success in the improvement of the Wheat plant.

"2d. To offer premiums for varieties new in the agriculture of Great Britain, and congenial to the soil and climate of the country.

"The varieties at present cultivated being unalterable, it follows that improvement in the Wheat plant can only be effected by the introduction of new kinds, and hence the necessity of knowing the productiveness of the old in order to have a standard for testing the new. In the first place such premiums should be offered as would sufficiently remunerate competitors for selecting and raising new varieties, and in the event of any of them proving upon trial superior to the standard old ones, the remuneration ought to be augmented. Time should be given for preparing for the competition, and candidates guaranteed that they shall have the uncontrolled sale of the produce of their varieties, so far as they are known, and no restrictions imposed, but evidence that they have been found suitable to the climate of the country.

" 3d. To have exhibitions of varieties when approaching maturity growing contiguous and under a parity of circumstances.

" The exhibitions being intended to afford information to practical men, the collection might be limited to approved varieties and such new kinds as are likely to prove useful, and after the first year samples of the grain of crops previously exhibited might be shown on the ground with the growing plants. When the meetings of a society are iterating, the Wheats could be sown to suit any place of meeting, and by enclosing the ground and charging for admission, their cultivation might be found to entail as little loss as the other departments of a general agricultural exhibition.

" If Wheats were exhibited in something like the way which has been pointed out, their properties when growing, and their matured grains would be seen under a parity of circumstance, and agriculturists enabled to select the kinds most suitable for their purpose. Superior varieties would become extended, and inferior ones curtailed in cultivation, while facilities would be afforded for introducing new Wheats of merit; seed-sellers would become guarded in their commendations, and checked in passing off one kind for another.

" There are associations in Britain for the improvement of almost every living organism which enters into the sustenance of man, from the Leek to the Cabbage, from the pigeon to the turkey, and from the rabbit to the short-horn; but Wheat, which forms the staff of his life, is little noticed and never treated in any way which is calculated to lead to its improvement. At the agricultural gatherings of the nation, machines which sow, reap, thresh, dress, chop, and grind are all objects of interest, but the plant which has chiefly led to their invention is neglected and never seen in a growing state.

" A plan not very dissimilar to what has been sketched was proposed to a provincial agricultural society many years ago, and after repeated discussions, it was partially adopted in 1831, when premiums were offered for experiments to ascertain the best variety of Wheat. A majority of the members favoured, and the staff of directors opposed the plan. The struggle was perseveringly maintained for nearly ten years, and no part obtained a proper trial, owing to the unfriendly staff carrying out the details upon which success depended."

Would it not be advisable for some of the great agricultural societies of this country to adopt the hint conveyed above, and establish rules under which trials to propagate new and valuable kinds of this important cereal could be instituted, and premiums which could incite attempts to be made, and which would crown the one who was successful with something more valuable than empty words? We shall have much more to say on this subject.

A Hint to Calf feeders.

At this season there is a lamentable want of attention to the young stock on a farm, and calves which have probably had the privilege of all the milk they needed from their dams are now shut off from their supply and turned out to fight their way during the winter, on straw or on hay, and with but little else except water at their pleasure. Many feeders also seem to think that when they give plenty of corn or corn meal to the young animal it is enough. But this is not the right kind of food. Where peas can be obtained and ground, the very best food for either young colts or calves during the first and second year, is a mixture of peas and oats ground together, bushel for bushel with a fourth part of Indian meal. The Indian meal when fed alone, is too apt to supply fat, only, and thus to stop the formation of bone and muscle, without which we cannot have size. Feeders should always remember that they must take advantage of the growing period of an animal's life, to obtain size, and that when, once the muscle and bone is developed and matured, then they can pile on the fat, and Indian meal is one of the best of substances for that purpose. We note that Wm. H. Sotham also recommends a treatment of the same kind in the following extract from a letter written to the *Country Gentleman*:

" I have been much pleased with a description a Devon breeder gave me of raising his calves, and which I intend to adopt in future. He has a small pasture adjoining his milking yard, milks two teats of each cow dry, and when all are thus milked, lets in his calves to take the remainder; this quantity of milk, with good pasture, keeps them in good growing condition. When taken from the cows, he grinds four bushels of oats with one of linseed; this fed moderately to them through the winter, mixed with chaff and a few small cut roots, keeps them in a growing state the whole year. I look upon this course as the true way of raising calves, and I consider it strict economy. They come out in the spring, and keep in growing condition the whole of the summer, until the heifers come in for the dairy, when they require better feed to keep up both milk and flesh."

To Find the Weight of Live Cattle.

Experienced drovers and butchers are in the habit of buying cattle and estimating their weight on foot. From long observance and practice they are enabled to come very nearly to the actual weight of an animal; but many of them would be most apt to err, if at all, on the right side; while the less experienced farmer always stands the greatest chance to get the worst of the bargain. To such we would recommend the following rule to ascertain the weight of cattle, which is said to approach very nearly the truth, in most cases. The proof of this is easily determined to the satisfaction of any farmer at most of the animal fairs, where scales are erected, and at numerous other points in the country.

RULE.—Take a string, put it around the breast, stand square just behind the shoulder-blade measure on a rule the feet and inches the animal is in circumference; this is called the girth; then with the string, measure from the bone of the tail which plumbs the line with the hinder part of the buttoes; direct the line along the back to the fore part of the shoulder-blade; take dimensions on the foot-rule as before, which is the length, and work the figures in the following manner: girth of the animal, say 6 feet 4 inches; length, 5 feet 3 inches; which, multiplied together, makes 31 square feet, and that multiplied by 23,—the number of pounds allowed to each superficial foot of cattle that measures less than 7 and more than 5 feet in girth,—makes 713 pounds. When the animal measures less than 9 and more than 7 feet in girth, 31 is the number of pounds to each superficial foot. Again, suppose a pig or any small beast should measure 2 feet in girth, and 2 along the back, multiplied together makes 4 square feet; that multiplied by 11,—the number of pounds allowed to each square foot of cattle measuring less than 8 feet in girth,—makes 44 pounds. Again, suppose a calf, a sheep, etc., should measure 4 feet, 6 inches in girth, and 3 feet, 9 inches in length, which, multiplied by 15,—the number of pounds allowed to cattle measuring less than 5 feet and more than 3 in girth,—makes 265 pounds. The dimensions of girth and length of horned cattle, sheep, calves and hogs, may be exactly taken in this way, as it is all that is necessary for any computation, or any valuation of stock, and will answer exactly to the four quarters sinking offal. The rule is so simple that any man with a bit of chalk can work it out. Much is often lost to the farmers by mere guess work in the weight of their stock, and this plain rule is well worth their attention.—*Valley Farmer.*

Care of Sheep.

The traveller who passes along any of the country roads in the spring will frequently notice in the fields at that season, a number of sheep, and sometimes whole flocks, whose coats of wool seem as if torn off their backs and as if they had been worried and torn almost to death by the wolves or the dogs. From every side, and every end of the animal, locks of wool and shreds of the fleece are dangling, almost as plentifully as the tag-rag-and-bobtail of a fashionable lady's head-dress; sometimes the whole or greater part of the wool has been stripped off, and only little patches remain around the head or the tail to bear witness to the fact that there had been wool on the animal, at some time or other during the course of the past year.

Such sheep as the above ought to be a caution and a lesson at the same time. The wool of the sheep it is well known, grows like every other animal covering. There is a period of the year when there is a tendency in the wool itself to stop its growth, and this tendency is increased by want of nutritious food, by disease, or by undue exposure. In our climate, and amongst our farmers it is the case that sheep are frequently brought into yards for the winter in a very poor condition to pass through that season. The cause of this is that they are left out on the stub-

bles, or on pastures, when no food is there that is at all nutritive, and also at a time when the temperature requires that the sheep be provided with good food; or the animal will consume the fat and flesh it has laid on during the warm months of the summer and autumn. In the latter part of October, and throughout November there is very little food in the best pastures although there may be a good sized bite. The animals may be able to fill themselves, but their stomachs might as well be full of chips or saw dust; for the nutritious properties of the grass are not in the blade any longer. Hence when sheep are brought into their yards for the season, they are frequently poorer than they seem, and they ought to be well fed. If not then well fed, the growth of the wool for that season gradually stops till it comes to a stand still, the tissues of the skin cease to act, and the fibres of the wool become dead close to the skin, and the fleece about the middle of March, could all be stripped off such sheep without shears. Generally, however, during the month of February the owner begins to notice that his sheep are not "doing well," that they look thin, that some have a few tags hanging out from their fleece, and these signs are not to be mistaken. He then begins to feed them a better quality of hay, and add to their rations a small modicum of grain or meal. But it is too late, the better food has the effect of doing that which the owner is trying to prevent; it causes the wool to fall off at an earlier day, for as soon as the animal begins to yield to the influence of the better nourishment, the skin begins to act and a new growth of wool commences. This growth is not continuous with the wool of last year, as is the case in well kept sheep whose wool by good food has been made to grow continuously the whole season through, but is separate. The fibre of the old fleece, at its junction with the skin has become dead and decayed, and whenever the new growth commences, the old wool is pushed off, and the slightest accident, even a strong wind will cause it to fall from the body of the sheep. Sheep breeders, therefore, should pay good attention to their flocks now, for it will be seen that this is the season when sick and weakly flocks are made, and when the fleece is destroyed, and not the spring months, when the temperature is growing milder each day. Recollect that wool will be worth attending to the coming season, and an extra half pound on a flock of two or three hundred will count up. Look at the cost of keeping a flock of high grade merinos, consisting of one hundred wethers and ewes, and it is easy to compute that a daily ration of two bushels of midlings or half a bushel of corn that will keep the sheep in heart, and their fleece growing, so that it will weigh from three to four pounds in June pays better than to have light fleeces, part of poor quality, and a lot of sickly animals and dead sheep at that time—a season when the farmer needs every dollar to aid him through his haying and harvest

Horticultural Department.

The Horticultural Department of the State Fair.

The writer has heretofore taken occasion to say something respecting the management of the Horticultural exhibitions at our State Fairs. The recent Fair has but added another evidence of the soundness of the objections heretofore alluded to. The writer is a sincere and earnest friend of the Society; and the following remarks and suggestions are made upon the principle that "open rebuke is better than secret love."

The fruits exhibited are placed upon the tables, and *named*, by the exhibitors, without the least surveillance on the part of the Society, except in the arrangement. In consequence of this, a very large percentage of the whole is incorrectly named; and hundreds if not thousands of visitors go away with spurious information respecting fruits with which they wished to form an acquaintance, and, doubtless, in many cases, obtain scions of the same spurious varieties; which of course, only grow up to increase the confusion so much to be deprecated. As a single instance among many, the writer saw at the recent fair the worthless Pennock apple labeled Esopus Spitzenburg, Steele's Red Winter, and several other names.

The committee who made the examinations and decisions upon apples, and, (strange as it may seem,) of all the miscellaneous fruits except two or three small lots, was composed of two teachers of public schools in Detroit. Men who are, it is true, discreet and honorable, and, doubtless at the head of their profession; but who, confessedly, knew next to nothing of the qualities of the fruits under examination, beyond what they could gather at the time; and who, although called to decide upon native and foreign grapes, were unable to distinguish the one from the other.

On the other hand, the Committee on Miscellaneous Fruits, comprising a couple of amateurs and a nurseryman, found, on receiving their list, that all the fruits in their class, on exhibition, were given to the apple committee, except two or three dishes of peaches, and one of plums: and this notwithstanding the committee on apples had, in its own proper department, as much actual labor to perform as all the other pomological committees combined. To make up this lack of work on the part of the Committee on Miscellaneous Fruits, they were required to report upon Vinegars, Wines, and *Whiskey*; a duty for which they must be supposed to be as ill prepared as were the committee on apples. In looking about for these articles, they were found distributed in three separate departments; while several articles could not be found at all.

The Society offers premiums for the "best 12 specimens" in each class. It is well known, that while one variety is "best" in one respect, another is also "best" in some other; so that, from lack of definiteness in the directions to committees, they are often sorely puzzled. As an instance, the apple committee gave this premium to the Twenty Ounce apple, although it is only good to cook. But it was "best" in size.

Premiums are also offered in each class, for the best seedlings; with description, history of origin, &c. This was doubtless intended to bring out new varieties of real merit, should such exist; but it is gravely doubted whether, under the existing practice, the object is not effectually defeated, for the reason that, although premiums are not to be awarded where the article is not worthy; the society has adopted no standard of worthiness, and the award is regularly made to such as present their claims, whether really deserving or not. This at first thought may seem a small matter; but it is really the cause of more evil than we imagine.

We have already far too many varieties of fruits in cultivation, and therefore should not countenance the introduction of new ones, unless they are, in some important respect, superior to any thing else of their season. The community soon become aware that these awards are no indication of the superior value of the varieties, and the reports of the committees add no information. So that, when a seedling of real value is presented, the award of a premium excites no inquiry, and the variety still depends upon private effort to establish its merits before the community. An instance illustrative of this occurred at the recent fair. Three varieties of seedling pears were shown by Mr. Woodbridge, of Detroit, to which the committee awarded this premium. Under the practice of the Society this award passes as a matter of course, and no one thinks them worth inquiring after. And yet it is the deliberate opinion of at least half a dozen persons, embracing some of the best judges in the State, that two of those seedlings, in flavor, equal, if they do not excel any other pear in cultivation.

Having thus looked over some of the difficulties under which this department labors, it becomes us to look about for the remedy.

The Society should furnish cards, or labels, for the fruits, &c., so that the names may be attached so conspicuously as to cut off all pretext for handling the fruits, except by persons properly authorized. The position of committee man, instead of being, as now, a mere butt on which disappointed men may expend their spleen, should be made *honorable*, and *desirable*; and the Society should act upon the principle that *no report at all*, is better than one made by incompetent persons. If we can do no better, let us pay such sum as will secure the services of good

men. Let it be remembered that at present, to act as committee man, is to forego all chance of examination beyond the range of his official duties ; and, in order to give him leisure to look about, and to mature his report in a manner creditable to himself, it may be better to forego the reading of reports, and to allow them to be handed in at any time previous to the final adjournment : requiring them to be made full, so as to embrace any and all valuable information in the possession of the committee. If needful, they should be furnished with a clerk : and, whatever helps they may have, let them be made conscious that their report will be esteemed the measure of their ability.

A Committee should be appointed, embracing the most thorough pomologists of the country ; whose duty it shall be to supervise the arrangement of the articles, and to *dictate* a correct nomenclature of the fruits on exhibition. Any whose names cannot be determined, should be marked unknown, or doubtful ; and such unknown or doubtful varieties should not be reckoned, where a premium is dependent upon the number of varieties exhibited. The directions to committees should provide that where competing varieties are well grown, *size* should not be allowed to take precedence of *quality*.

In the case of seedlings, the exhibitor should be required in addition to description of fruit, history, &c., to describe the growth and bearing qualities of the tree ; so that the committee may be able to judge of its profitability, as well as its quality ; and no fruit should be allowed to take this premium, unless it is at least equal to any other similar fruit of same season.

With the award of such premium, in all cases, the origin and history of the variety, should also be published; together with the committee's estimate of its value, and the purpose to which it appears to be specially adapted.

For the convenience of horticultural committees, it is indispensable that a complete set of pomological works be kept, conveniently accessible for reference.

Native wines, and *cider* vinegar, may with propriety be claimed to belong in the department of Horticulture, inasmuch as they are obtained from horticultural products ; and it is doubtless the duty of the Society to encourage their manufacture. This being the case, suitable conveniences should be provided for their exhibition, and they should be given in charge to a suitable committee, with appropriate premiums. Such committee should be *practical chemists*, with the means at hand to detect adulterations, or improper ingredients. If the making of compounded vinegars is to be encouraged, they should certainly appear as such, and stand strictly upon their own merit. If the manufacture of such compounds, and especially of *Whiskey*, is to be encouraged by the Society, I can only hope that the

Horticultural department, and especially Horticultural Committees, may not be compromised in the matter.

T. T. LYON.

Plymouth, Mich., 1858.

Window Plants.

Generally speaking, novices in the art, when taking up their plants for the windows, use too large pots, often wanting quite a tub for some plants. This is wrong; as too much soil gets sour and sodden, when no plant can keep healthy with such a soil to ramify their roots into. Usually the plant is the better for home trimming, often considerable, to get it into shape ; then the next thing is to go to work carefully and extract as many roots, especially fibrous ones, with the plant as possible. Now, some in this respect are quite easy to get. Of such is *Cuphea platycentra*; others, as *Geraniums*, come up with straggling roots only. The former kind often want the roots reduced somewhat, the latter not at all. The diameter then of the sized pots required can be ascertained by finding what size will just conveniently take the roots, and then that pot is large enough for the plant. Don't use too retentive a soil to pot in; if you do, when baked together, it will shrink and leave a cavity between the soil and pot, so that in watering, instead of the water penetrating the whole mass, it runs down the sides, and the plant is in danger of perishing from lack of moisture ; use sand as an opener along with decayed vegetable matter and some rotten manure ; press the soil tolerably firm during the operation of potting.

As long as ever mild weather lasts, give the plants the benefit of abundance of air ; they then grow robust, and by and by when winter comes along and fresh air scarce, except with killing coldness to vegetation, the natural vigor of the plants will help them through the hard times. Such plants as *Fuchsias* often look sad at this season of the year ; put them by in the cellar to rest ; give them no water while there ; soon after the opening of the new year, they will come forward rapidly and fine if once more brought to light and heat. Above all, if you value your *Fuchsia* or *Ladies' Ear Drop*, don't leave it in the open ground, or you will be gladdened by it no more. It is a native of Mexico and some parts of South America, and cannot stand our winters ; they will in some parts of Europe, not here.

The *Oleander* a general favorite, may also be kept in a light cellar, but is much better if it can be in more light. The great secret in keeping any of these sort of things in a cellar or other dark place is to keep them dormant, hence cool and scarcely any water—none while the leaves do not flag. *Camelias*, otherwise called *Japonicas*, are sometimes met with in windows. The foliage of these should be frequently sponged, and the plants kept in as humid an air as possible, else they drop their flower buds.—EDGAR SANDERS, in *Emery's Journal & Prairie Farmer*.

Pear Culture.

MR. EDITOR:—I am one of those who believe in pears, and in their profitable culture, and I think that the growing of this fruit is spreading, though very slowly in the west, in comparison with some other fruit. A pear orchard is a desideratum much wished for by every one, and it would seem by the specimens of pear trees to be seen near Detroit, that neither our climate nor our soil are such as to prove a hindrance to having this kind of fruit. I believe that one of the causes why the Pear has not been more cultivated, is to be found in the favor which has been raging for dwarfs; many believing that they could have fruit just as easily from dwarfs as they could have cabbage from cabbage plants. The disappointment has created a sort of "sour grape" feeling, with regard to this delicious and much desired fruit, which ought to be dissipated. I admit that pears cannot be so easily grown as apples, but the prices paid for them when offered in the market, certainly remunerates the grower in equal proportions. Now that another year is commencing, I would ask through your columns, that Mr. Lyon would give me and many others of your readers, some information as to what kinds he has found best adapted to our soil and climate; and now that I am ready to plant out next spring, one hundred trees, with a view to grow pears for market purposes and also with the design of planting as many more in the spring of 1860, I would like to learn what sorts such a practical orchardist as Mr. Lyon would recommend; and what proportion of summer, autumn and winter varieties, I should have.

In preparing the piece of ground, which I have selected on the east side of a piece of timbered land, and on which I mean to leave the trees standing for some years at least, I have taken care to plow it to a good depth, by going in the same furrow twice; this, I believe, you call trench plowing. The soil is loamy, and somewhat stiff, with some stones among it. The yellow subsoil has been turned up to the depth of at least fourteen or fifteen inches from the surface. There was a crop of oats taken from the field the past year, and I consider it now in tolerably good order, as it has never borne but two or three crops of grain. After I set out the trees, I mean to give them a good chance to do well, as there will be neither grain nor grass put on the field, until the trees begin to bear, and possibly not then, if I am sure that the orchard will do better without them.

Yours, INQUIRER FROM MACOMB Co.

Herbaceous Pæonies.

We take from the November number of *Hovey's Magazine of Horticulture*, the following extracts from an article on the cultivation of Pæonies, as giving the best description of the improvements which

have been made on this "glory of the summer garden," during the past fifteen or twenty years.

"It is but a short time since the attention of cultivators was first given to the production of new varieties,—not more than twenty-five or thirty years, and principally within twenty years; in the latter period the French and Belgian collections have been increased from twenty to one hundred varieties, and the magnificence of some of them surpasses any description. Till within half a dozen years there has been a great want of rich dark colors; but this deficiency has been supplied by M. Parmentier, a Belgian amateur, who has devoted nearly thirty years to the improvement of this flower, never parting with a single plant till 1853. Most of his seedlings are nearly as rich in color as the old double red, full, and extremely double; and several of them of the deepest crimson, purple large, they have been remarkable acquisitions. Besides M. Parmentier, of Belgium, the principal improvers of the pæony abroad have been M. Guerin, Verdier, Lemon, Delache, and Miellez, of France.

"Our own amateurs have not, we are glad to know, overlooked the peony. Messrs. Cabot and Putnam of Salem, and Mr. J. Richardson of Dorchester, have each raised several very beautiful flowers. Those produced by Mr. Putnam have already found their way into the trade, and though not equal to some of the newest foreign varieties, they are quite as good as the older ones. We doubt not that perseverance in the growth of seedlings would result, as it has in other plants, in the production of kinds quite equal to those of the French or Belgian florists. Careful hybridization would effect in this flower what it has in the Camellia, of which some of our American seedlings surpass all others.

"It is since the publication of our last article on the peony, in 1852, (Vol. XVIII.) that the most beautiful varieties, with a few exceptions, have been introduced. Previously the flowers did not embrace a sufficient variety of colors; there were too many light ones, and scarcely a good dark one except Pottsi. Of the latter description, M. Parmentier's seedlings, as we have stated, are unique; and other growers, particularly M. Verdier the elder, have also produced some fine deep colored flowers. Of the intermediate tints, such as rose, deep rose and violet rose, some very superior varieties have been obtained. All the latter seedlings are of better form than the earlier ones, being more full and globular, with a good row of outer guard petals, and a well filled and rounded centre. This is the natural result of an improved taste, which progresses with the improvement effected: at first we are satisfied with novelty in color without much regard to form, as something has been achieved; but sooner or later we are not content with this alone; the next step must be improvement in form, until, after a time, some standard

is established, below which none should fall deserving of cultivation. Just as a double dahlia at one time, and this not many years ago, was thought to be a wonderful flower; while at the present day, it must not only be double but must come up to that standard which has been established after many years of cultivation has shown to what perfection it could be brought.

The most beautiful form of the peony is that of the *Festiva*, one of the most magnificent that has ever been raised, equaling in this respect, we think, the *Festiva maxima*, though not so large and showy as the latter. This may be taken at present as the standard of form. The inner petals are of good size, cup-shaped, and the flower, when in perfection, is a perfect ball. Some flowers are filled with long, narrow, fringed petals, with a tuft in the centre; others have broader petals, and are too much flattened at the top; while a third has the true anemone shape. These forms, as well as the several varieties of them, are each beautiful in their way, but not equal to that of *Festiva*, and though it may not be possible, for a long time, to produce varieties of this shape, the nearer they approach to it the higher they will be estimated by all cultivators of this beautiful flower.

"We have been highly delighted the past season with the magnificent display of flowers in our collection of upwards of eighty varieties, and while in bloom we made brief descriptions of most of the more recent additions; these, with the number already described in the volume above referred to, embrace a sufficient number to make a choice selection, which cannot fail to please every amateur cultivator."

The Late Paris Horticultural Exhibition.

I herewith send you the result of a few observations I made when present at the great Paris Exposition of plants, flowers, fruits, &c., held there last week. In the first place I may state, that exhibitions of horticultural produce in France differ from those of the same nature at our great London flower shows or even the metropolitan flower shows, of Ireland and Scotland, in their general aspect as well as the objects principally aimed at.

British flower shows, as they are at present conducted, are fashionable *reunions*, attended by the *elite* of society, where the gayest flowering plants which money and skill can command are contributed by wealthy private individuals to please the eye, whilst at the same time the choicest and sweetest music that can be procured is performed to charm and delight the ear. Hence, gardening and floriculture among English ladies are considered to be as fashionable occupations as feeding fat bullocks and the application of Liebig's principles of chemistry to agriculture are so considered by English gentlemen. Both are therefore well supported by the wealthy classes, and our large plants and large oxen are the pride of our own eyes and the admiration of those of our Continental neighbors. In these respects the flower show held at Paris last week appeared to differ from the English shows, by being more of a business transac-

tion. The greatest part of the articles exhibited were contributed by nurserymen and from public institutions. Neither very showy plants, nor military bands to perform music, nor the fashionable people who throng the Champs Elysees and Bois de Boulogne in their gay equipages, were present on any of the two days I visited it, consequently, so far as money matters are concerned, the exhibition was not nearly so well supported as we generally see exhibitions of a similar kind in England. It seemed to me rather calculated for the purpose of instruction to the practical and middle class of society than for amusement to the wealthy.

The large gallery of the Palais de l'Industrie was pretty well filled from one end to the other, and some of the leading features were the following:—In the centre stood two rows of tables ranging from one end to the other, but divided in lengths of 20 feet or so, which enable the people to get well round them in groups, and inspect everything leisurely. No 26 D calling out "Cawn't go this way," or "Move on that way;" for any ropes or wire gratings to look over or through, in order to prevent those who have the bump of acquisitiveness largely developed from acting on their natural impulse. Everything was freely exposed and nothing touched. On those compartments groups of plants were placed in the centre, with fruit generally round the outsides, whilst others were wholly occupied with plants, which were generally exhibited in very small pots or tubs. To English growers the French method of cultivating plants in pots did not appear to much advantage, though the one-shift system appears to be making some progress. There were a few specimens of *Lantanas* larger, better flowered and managed in every way, than I ever saw them elsewhere; but the majority of the plants appeared greatly cramped for pot room. The most effective specimens were three tolerably large-sized *Latania bonbonicas*, which were placed on tables at each end of the gallery and one in the centre. These were surrounded by groups of smaller *Palms*, such as are generally seen in Continental nurseries, along with other *Monocotyledons*, *Yuccas*, *Dracænas*, *Musas*, *Marrantas*, &c. There were no *Ericaceous*, and few hard-wood plants of any sort. Effective foliage seemed to be the prevailing feature. Among the groups exhibited by nurserymen, M. Luddeman had good healthy plants of *Arenga obtusifolia*, *Areca lutescens*, *Augustinea major*, *Carludovica atrovirens*, *Ceroxylon nivium*, *Cocos amara*, *Latania rubra*, *Martinezia Aphantes*, *Enocarpus utilis*, *Seaforthia elegans*, *Dracæna canaefolia*, *D. mauritiana*, *D. umbraculifera*, *Cephalotus follicularis*, *Guzmannia tricolor*, and some of the lately introduced *Begonias* with variegated foliage.

M. Debris, fils, had also a good group, among which *Dracæna Draco*, *D. guatemalensis*, *D. congoëta*, *Pincenectia tuberculata*, *P. eximia*, *Pandanus utilis*, and *P. javanicus* were conspicuous. M. Debris, pere, had good plants of *Coccobola bubescens*, *Musa zebrina*, *Dæmonorops latispina*, *Dasyliion mexicanum*, *Astrocaryam Airi*, &c.

M. Cantin's group contained well grown plants of the new *Caladiumus Cantrini*, *argyrites*, *argyropilum*, *Newmani*, *Houletti*, *violaceum*, &c., which are all fine additions to our variegated-foliated plants, and will no doubt soon be in most collections, especially the three former. I only observed one group of *Orchids*, and one of *Ferns* and *Lycopods*, which were all small plants. The former was, I believe, exhibited by M. Luddeman, and had one good *Vanda cærulea* in flower. Among the few novelties I had not seen in England

were two charming little plants bearing considerable resemblance to the well-known *Anseetochili*, viz., *Pogonia discolor* and *P. Nervilia*, both natives of Java, and exhibited by M. Willinck, nurseryman, Amsterdam. Another very interesting group was sent by M. Ramus, an amateur, and consisted chiefly of *Mammillarias*, and *Echinocacti*. They were fine healthy clean specimens of the rarest and most beautiful sorts, all properly named and some in bloom. In the centre stood a large specimen of *Elephantipes scaber*, profusely in bloom, which was greatly admired. Some large specimens of *Gynurium argenteum* in tubs were placed on two of the tables, the showy panicles of which attracted much attention. Dahlias and other florist's flowers were generally poor, compared with those seen at British exhibitions; but the Roses and especially the China Asters were good at this period of the season.

The fruit department was well represented, particularly in Pears, which were magnificent, and such as only can be seen where the summer heat is greater and the sunshine brighter than they are in England. The finest Pears exhibited were produced from flower-buds, which had been inserted on barren spurs of other trees during the previous autumn. This method of budding is called by the French "greffe de boutons a fruit," which to me was a novelty in horticultural manipulation. The whole spurs were cut from the trees to show the buds inserted, which latter had produced no wood shoots, but only the fine fruits, in clusters of threes and fours. The best specimens were those of *Doyenne d'Hiver*, *Duchesse d'Angouleme*, *Beurre Clairgeau*, *Belle de Berry*, and *Belle Angevine*. The Grapes consisted of sorts which ripen mostly in the open air, and had a miserable appearance to those who had seen the fine Grapes shown at the Crystal Palace a fortnight previous. There were however some promising kinds from seed; a circumstance one seldom sees in Britain. Pine Apples were few, but grown to perfection. They were exhibited growing on the plants in pots, which appeared to be an improvement on our-method of showing them cut, as some knowledge could be obtained of the manner they were cultivated. At a rough guess, I should say the fruits averaged from 6 lbs. to 10 lbs. each, though the plants were in pots not larger than 12 to 13 inches. Connected with the fruit department was a series of fruit trees in pots and tubs, for the purpose of exhibiting the different methods of grafting, budding, pruning, training, &c., which afforded much interest and were closely inspected by both practicals and amateurs. To me some of the manipulations appeared ingenious as well as effective. One curio's mode of grafting is interesting in a physiological point of view. It consisted of the leaf of an Orange tree, which had produced roots from the footstalk, after which the parenchyma was cut from each side of the midrib near the centre, when a scion was grafted on the latter, which was pushing into a regular and vigorous plant. I understood the person to say that these scions were covered up with mould, into which they soon rooted, when they had both the advantage of their own roots and those of the stock on which they were grafted. Among the vegetables were many articles never seen at English exhibitions, particularly the different kinds of Cucurbitaceous fruits. The curious forms and bright colours of some of the Gourds were attractive, and not brought there as mere curiosities, for the French make use of them extensively in their potages and other dishes. The "Courge siphon," or Siphon Gourd, *Cucurbita*

longissima (?), had thick fleshy stalks, varying from 18 inches to two feet, attached to fruits about 18 inches diameter. "Courge longue d'Espagne" formed also a curious object. There were many examples of "Igname de la Chine," *Dioscorea Batatas*, which even when grown under the influence of a French climate did not appear to me likely to supersede the Potato at any very early date. The fleshy roots were mostly from a foot to 14 inches long, varying from 1 to 2 inches in diameter at the thickest parts. One new bulbous vegetable was exhibited in nearly every group, called by the French "Cerfeuil bulbeux" *Cherophyllum bulbosum*, which has not hitherto, I believe, been used for culinary purposes in England, though rather extensively in France.

A large black root called "Radis noir," Carrot-shaped Turnips, "Celeri rave," which is a variety with thick bulbous stems, as well many other culinary vegetables were exhibited which are little known in England.

One of the collections sent from horticultural schools was worthy of much commendation. It was from the "Ecole Municipale Supérieure d'Orléans," and consisted of 46 kind of Potatoes, with bottles of flour from each sort. The history of each kind was written on a card attached to it, viz., the time the seedling was raised, the periods at which they were planted this year, kinds of soil and manures used, amounts of produce, weight of each sort to produce a given quantity of flour, &c. Such exactness in detail cannot fail to produce a marked effect on the youths who receive their education at such institutions, which will no doubt act beneficially on French horticulture and agriculture at no distant period. There were many other new things in this group.

In concluding these brief remarks on a subject which admits of being largely dilated on, I shall only mention one other feature which differed from our exhibitions. At the end of the great gallery was a book-stall, well supplied with useful works on practical horticulture and agriculture, as well as on other branches of rural reproductive economy. The prices at which the treatises were sold varied from 1 to 4 or 5 francs, at which they seem to be bought up pretty freely.—D. M., in *London Gardeners' Chronicle*.

The *Dioscorea* an ornamental plant.

I have grown this successfully for these last three years, and I coincide with the opinion you expressed in a recent number, that the plant may be improved, and its utility extended by cultivation. The first year that I obtained the Yam, as the sets were small and weak, I had them planted in a Cucumber frame, where they had for a short time the advantage of a little heat; the result in the autumn was a number of well-developed tubers, the weight of which in the aggregate was estimated to be equal to an ordinary crop of early Potatoes, grown under similar circumstances. The second year the sets were started in heat and planted in the open ground in June, with the ridge Cucumbers, on a bed made up in the usual way with lawn sweepings, Cabbage stumps, and garden rubbish; the bottom heat given by this mass of fermenting matter evidently suited the habits of the Yam, the plant grew luxuriantly and produced some remarkably fine tubers; these tubers had penetrated

to the very bottom of the trench, which was 2 feet 6 inches in depth.

I have again this year associated the Yam with the ridge Cucumbers, and they present a healthy and vigorous appearance; by far the most promising plants are some which have sprung from the tubers left in the old bed of the year before; these grew so luxuriantly that I was induced to afford them the support of stakes, which they speedily clung to and covered. I am disposed to imagine that I shall have some very large tubers from these plants.

The elegance of the foliage of the Yam, and the rapidity of its growth, led me to employ it as an ornamental climbing plant, and last year two sets were planted and their slender shoots trained over a trellised porch. The roots remained undisturbed during the winter, and this year the plants made a more vigorous growth, covering the same trellis, which is 8 feet high and as many wide, with a profusion of graceful foliage. Within the last month the Yam has blossomed abundantly, and in the exceeding sweetness of its tiny unattractive racemes of flowers, it has revealed a quality which I have not seen noticed, but which will make it worthy of association with the more elegant and ornamental objects of the gardener's care.

I had nearly omitted to state that the plants in the old ridge Cucumber trench have also blossomed this season, but under a crowd of foliage the bloom has been in a measure obscured and destroyed; the beauty of the plant is best displayed when trained over an open trellis.—*W. I. Belvoir, in London Gardener's Chronicle.*

Horticultural Notes.

The best of Flower beds.—A writer in the *Cottage Gardener* says, "Order six plants of the *Tritoma uvaria*, and eighteen bulbs of *Tritonia aurea*. Plant the first in a circle of two feet across in the fall months, and early in the spring plant the bulbs four inches deep in an outer circle around the *Tritonia*, and in the autumn you will have the gayest object in the flower garden at a cheap rate." The *Tritonia* is a species of the *Iris* tribe, whose original habitat is South Africa. In England they stand out the winters well with some protection, such as a mat, or a thick covering of straw. The *Tritoma* belongs to the *Lily* tribe.

The same writer says "the best flower bed in the gardens at Kew, and the best in England, at this moment, (August) is a mass of *Flower of the Day Geranium*, about four feet across, and ever so long, with one row of *Brilliant*, all round, and a fourteen inch edging of *Purple King Verbena*. Another fine bed which he speaks of is formed of a large circle filled with *Flower of the Day Geranium*, and edged with one row of the dark purple bronzed *Perilla*. The seeds of the *Perilla* are sown under glass in spring, and the border is kept in order by trimming.

Orange trees.—Orange and lemon trees growing in tubs or pots, require to be repotted every season, and the best time to do this is at the time when the tree is beginning to grow for the season. In repotting, the old earth may be allowed to crumble away from the roots, but the roots themselves should be preserved whole, and not allowed to break off or be injured in any way.

Bagley's Perpetual Raspberry.—*Hovey* in his *Magazine* speaks of the *Bagley Perpetual Raspberry*, as being exhibited at the meeting of the *Pomological Society*. He says that neither the *Merveille* or *Catawissa* would compare for size or fullness of berry, with this new variety. It has been cultivated for four or five years near New Haven, Conn., and is perfectly hardy. The old canes are said to bear a bountiful crop of delicious fruit during the month of July, when the new canes commence bearing, and continue to bear till the frost comes.

The Catherine Grape.—The *Catherine Grape* is the name of a seedling, fruit from which was shown at the *Hartford Horticultural Society's exhibition*. The *Homestead* notices it as being pronounced good.

English Cider.—The following directions may prove useful to some of our cider makers, though not very important this season on account of the scarcity of apples: "Gather the fruit when perfectly ripe and dry, and store them in some cool room or cellar, in small heaps. Grind in November, or when the weather is cool. Add sugar or maltwort enough to bring the juice to a specific gravity of 1070 or 1080; then ferment in a vat or other vessel till the gravity is reduced to 1060. Transfer it to clean casks, and afterwards sack it off into barrels which have been well fumigated with burning sulphur and place these in a cool cellar to keep.

The Hawthornden apple.—It is said that the *Hawthornden* apple was introduced from England from Scotland, before the grandmothers of any of the present generation were born.

The Crystal Palace Show of fruits and flowers in September last. There was shown for the first time in Europe, a dish of twelve mangoes, the fruit of the *Mangifera Indica*, considered one of the most delicious of all known fruits. In shape these mangoes were like *Magnum Bonum* plums, and in size as large as medium pears. They were grown by the gardener of Sir George Staunton of Leigh Park, England.

A good idea on root Pruning.—A gentleman having an *Easter Beurre* Pear that did not fruit well, resolved to root prune it, and pursued the following method. First he made a circle around the tree, at the distance he determined to prune the roots, and divided it into one half. He then dug down to the roots on that side of the tree which he had fixed upon to prune first, and after getting down he cut off all the roots he thought necessary, filling in the trench. The next season he opened the trench on the other half circle, and served it the same way. By this method the tree was completely root pruned, without sustaining any injury from the operation, and its fruit bearing properties restored.

John Hague writes to the *London Cottage Gardener* that having a *Peach* tree that dropped its fruit before ripening he resolved to try the effect of salt, and accordingly gave the soil in which it grew a coat of salt sweepings, and washed the salt in with a watering pot and a dose of water. He then gave the soil a large quantity of soap suds. This treatment he repeated three times for three successive months and the result was that he secured a fine growth of fruit the present season.

A Scarce Plant.—The *Vallotta purpurea major* is pronounced by competent authority, the best and rarest bulb in Europe. A Miss *Dolphin* of *Sydenham Hall*, England, exhibited one at the *Crystal Palace Flower Show* that had two strong flower stems and eight flowers on each. This is the first public exhibition of this bulbous plant that has ever been made in Great Britain.

What's in a Name?—We see it noted that the apple which goes by the name of *Holland Pippin*, should be really called the *Hollow-eyed Pippin*—*Holland* having nothing to do with the fruit or its origin.

The Household.

"She looketh well to the ways of her household, and eateth not the bread of idleness."—Proverbs.

EDITED BY MRS. L. B. ADAMS.

More Experience and Observations.

In my rapid travels during the past month I have found neither time nor opportunity to write a word for the FARMER, and now coming in as I did near the closing up of the number, our friends must not expect a detailed account of all that I have seen and heard. Some, indeed, may be thankful to be spared the infliction, while others, to whom I have replied in the affirmative when asked if I were not "taking notes" may be disappointed at learning that they were bank notes, and not notes of travel. However, it may not be amiss, even now, to say a few words in regard to the section of country through which I have passed, and also to give a few hints to delinquents in places yet unvisited.

The general erroneous impression that heretofore prevailed respecting the surface of the State of Michigan, has been gradually effaced from the public mind, as it has become known that it is not all a succession of swamps, marshes and oak barrens, as was represented by some of the earliest writers who visited the Peninsula. If any are still in doubt as to whether high and dry places are really to be found within our borders, I would recommend them to take a trip through Oakland county and the southern portions of Lapeer. Oakland, as far as I saw of it, to the west, north and north-east of Pontiac is remarkably high and uneven, yet most of it covered with fine farms which extend their broad fields over the hills, or lie outspread in quiet beauty beside the hundred lovely lakes that gem the land. The citizens of Pontiac are beginning to appreciate the beauty of the lake scenery in that vicinity, and many of them are building, or have already built charming country residences along the banks of Cass, Pine, and Orchard Lakes. Among those whose names I remember are the Hon. S. M. Green, O. C. Morris and G. W. Howard, all of whom have shown their good taste and love of nature by preserving sacred the beautiful forest trees beneath whose shade they have planted their homes.

There is a broad sweep of rich farming land through the town of Waterford, known as the Drayton and Sashabaw Plains, and on these, and farther south, through the town of Bloomfield, are many splendid farms, and some farm houses in such a style of magnificence that a glance at once puts to flight all idea of hard times. The fields and barns and dwellings all seem filled with comfort and plenty. If they are not really so I can only say that appearances are very deceitful.

Northward, in the town of Orion I spent the sabbath of the 7th of November at the house of C. K. Carpenter, Esq., one of the FARMER's best friends and most energetic agents. There are a few families in the world who know how to entertain strangers with genuine and generous hospitality, and Mr. Carpenter is among them. Whether nature or the hard times has made so many penurious, penny-pinching people as are to be met with, it would be hard to say, but it is pleasant to know that there are those who are above the penny principle in matters of friendship, and who can be generous in spite of the times.

From Orion my way was north through the little village of Oxford, and thence to Metamora in Lapeer county. The weather through the whole week that I had been out, was cold and wet, the rain coming in fitful gusts mingled with sleet during the days, and pouring down in torrents night after night till the roads had become almost impassable. Many times I felt like turning back in despair, and sitting down in our office to wait with a kind of desperate, hopeless patience, as I had done all the year past, for the money we had so hardly earned, but which so few would ever think of sending in. The boy driver beside me was chilled and blue with cold, the keen north wind drove the rain mingled with snow into our faces, the horse went struggling on, pulling us out of miry deeps to plunge us into still more miry deeps beyond. I thought it all over. Behind me was our comfortable office, the boys with their nimble fingers busy at the type cases, the Editor half buried in the piles of letters and newspapers accumulating around him, our trusty old stove diffusing a generous warmth through the room, and, in one corner my desk with the vacant chair beside it—I began to put out my hand to draw the rein that would turn the horse's head towards home and turn our backs to the pitiless storm that almost blinded us at times, in spite of the top buggy and the muffling buffalo robes our Oxford landlord had provided. But something seemed to say, "The money your business needs is before you—go, ask, and you shall receive; turn back, and the moment you enter that moneyless office you will reproach yourself with weakness and cowardice."

I knew it would be so: but still I thought, why can the money not be sent in by letter? it would cost each man but a postage stamp, and save me this fatigue and exposure, to say nothing of the expense of such a journey. That question of "why" has never yet been answered satisfactorily, though I persevered to each man's door in spite of wind and rain, frost and snow, sometimes in a comfortable buggy, sometimes in a good stout lumber wagon, and sometimes on foot. In showing my list to the postmaster at Metamora, I pointed to three names, each *six years* in arrears, and asked if

it were possible that such men were living. "O yes," said he ; "all *good* men—all able to pay—one a little pinched perhaps, just at present, but safe enough in the end. That Mr. P— is one of the richest men in this section of country, and able to pay any minute; but he never *thinks* of it. He is in Detroit now, has been there nearly all the fall, one of the jury of the United States Court, but I doubt whether he will ever think of stepping into your office to pay that little bill. You might call on his wife, now that you are here; she always has money and would be just as like to pay it as any one."

I did call on his wife, and she paid the six dollars; blessings on her for the cordial smile that brightened her matronly face when I told her my name, and the promptness with which she met my demand, saying as she handed me the money;

"I wonder he let it run so long; it was so thoughtless of him!"

The others on the six years list I found, as the postmaster had said, "a little pinched just at present," but they paid cheerfully what they could, and gave good promises for the balance, which I trust will not be forgotten. The postmaster, Mr. Barrows, gave me every assistance in his power while I remained in the neighborhood of Metamora, and even advanced money on several subscriptions to save me the trouble of exploring the bottomless roads that were said to lead where the delinquents lived. Also, to his kind lady and her cheerful daughters I am much indebted for the home-like welcome they gave me, and their thoughtful attentions to my comfort the many times I returned to their hospitable home after days of weary travel.

In this connection I cannot help mentioning, as a contrast, the conduct of a postmaster in the same county. Instead of advancing money, on delinquent, or any other subscriptions, *he had used our money paid to him in advance* by a large club at that place for the past two years, and it was only with the utmost perseverance and difficulty, and not till the last moment of my stay there that I could get him to refund the amount he had appropriated.

There is quite a diversity of country through the southern part of Lapeer county. Hadley and Metamora, towards the west, are much broken into hills and hollows, mostly timbered with oak; while Dryden and Almont, towards the east, are generally level, and what is called "brush land," or timbered with a thick growth of small poplars, basswood, elm, &c., with here and there a strip or patch of beech and maple woods. Scattering pine trees, and now and then a beautiful grove or cluster of them may be seen in almost every direction, and there are some dismal looking tamarack swamps intermixed with scrubby pine and white cedar. It is said there is no better wheat soil in the State than is found in the township of Almont. The land seems to lie very high, but level, and

the little timber originally upon it, has made it so easy of cultivation that it now presents the appearance of a very old settled country, the broad fields spreading out before you like prairie land, while the tasteful dwellings and ample barns assure you of the comfort and prosperity of the owners. The village of Almont is one of the prettiest I saw in my northern trip, and is quite a lively little place.

North and west towards the county seat, Lapeer, the country is rather wild and rough, and, at the time I went over it, the clayey hills and swampy hollows were almost impassable. A mile and a half north of the town, I found the residence of our agent, Mr. J. Swift, where I was kindly welcomed, and where I spent the night. The stormy weather which still continued, and the awful state of the roads prevented my visiting any of the subscribers in that vicinity, and I was glad to get back to spend the Sabbath on the drier hills of Metamora.

Monday the ground was frozen like a rock, and so rough that no unshod horse could be permitted to put his foot outside the stable door. I walked five miles over the breezy hills that morning, and then finished up the day in a comfortable lumber wagon with a stout pair of well shod horses before it. After this the cold increased to such a degree that I determined to turn home again, only paying a brief visit to Farmer's Creek, and Rural Vale and so through Brandon in Oakland county, and by Clarkston to the railroad.

Notwithstanding the unfavorable weather and the terrible roads, the object of my journey was accomplished, and I returned satisfied with the result.

Food and Exercise for Infants.

The Scalpel, published in New York every three months, and edited by Edward Dixon M. D., is one of the practical as well as the most popular of medical journals. Its articles on subjects which interest and instruct every member of community, are of the utmost ability and force. No journal in the land has been more efficient and trenchant in expressing the deleterious effects of alcohol, tobacco, patent medicines, and other compounds, which society is in the constant use of very much to its own degradation, and injury. No notion is more prevalent especially with young mothers who don't wish to be troubled with infants as they are apt to interfere with their pleasures, than that children may be fed, and rocked, and jolted *ad libitum*, and if the "dear little pets get sick on this treatment, it is solely because they don't know what is good for them." The Editor of the Scalpel remarks on this subject,

"We can not forbear a few words of advice to mothers who may not be able to nurse their infants, and some who are astray on the subject of exercise and fresh air. The difference between the milk of a human being and a cow or goat, is at an infinite re-

move from the popular articles, arrow-root, gruel, or boiled crackers; and the quiet which it has required and been insured by its nine months' existence within the womb, at a temperature of 98° to 100°, is wonderfully at variance from being jounced on the knee, rocked in a cradle, or ridden in a little ill-constructed wagon over a side-walk, in the varying temperature of our changeable climate. If the mother be not able to nurse her child, and we have often had occasion to show how rarely the American mother is so, she will, if she be not under the influence of sadly ignorant persons, medical or otherwise, endeavor to procure the milk of one healthy and hay-and-grass-fed cow or goat—the goat's milk being considerably nearer in the elementary constituents to that of the mother. How far this milk should be reduced by water, will depend entirely upon the capacity of the infant's stomach to digest it. One of the constituents—namely, the casein or cheesy element, is occasionally in excess for the particular infant to whom it may be fed. When this is evinced by the rejection of the milk by vomiting regularly occurring for several meals, it may be reduced one third, and fed in smaller quantity, till the true measure be found which the particular infant requires.

All "doctoring" and mixing of milk we utterly repudiate. As well might you attempt to alter the elementary albumen of an egg, and fit it the better to produce the chick before the egg is hatched, or the mother's blood before the child is born. We know just as well what it requires after birth, for all the period preceding the production of its teeth, as we do before its birth; it is milk, and milk alone. Sugar is, with us, exceedingly questionable, especially so when we consider that the poor use very inferior varieties, and often the brown, or unrefined article, with which they unconsciously administer a considerable portion of rum. The safe way is to use milk, and a third Croton water, at blood heat. We should always prefer goat's milk, if possible to be had, because it is nearer to that of the human being. When we discover a woman whose breasts produce crackers or arrow-root, we will admit the propriety of using them as food for infants.

"Of one thing we may assure the young mother: all the milk the child will take and retain, it is proper that it should have. Nature is supreme, and knows her own wants.

"Rest is the infant's natural requirement until it begins to creep. As for periodical exercise by riding it about cramped up in a little wagon, it is absurd. If the child's brain were not jarred and its circulation hindered by the unnatural motion, till it is compelled into a sort of stupor, which is taken for sleep, it would evince its dissatisfaction by its cries. The crystal is only formed according to its natural law, when the water in which the salt is dissolved is in a state of quiet; and the seed requires warmth and

quiet before its rootlet strikes into the ground, and its leaves open to the light of the day. During vegetative life within the womb, every precaution is taken by nature to secure this end, and when it is born, it is very evident that for a year, at least, its healthful existence is little more than vegetative. The young of all other animals, show by their activity that a more rapid evolution and a shorter life were intended by nature. Hence we observe they eat and peck their food as born, or hatched.

"We would caution every young mother against preternatural excitement of the nervous system of her infant by too early exercise and too much notice of any kind, either by voice or by teasing or handling. A natural diet, and a year's rest, in a good, well-ventilated chamber, is calculated to insure a healthful acquirement of its teeth, and the use of its limbs, at the proper and appointed time. Nearly all the cases of diarrhea of the second summer, are consequent on the abuse of diet and over-exercise of the nervous system.

"The finest and healthiest child we ever saw, a boy now four years of age, the son of a merchant of this city, was brought up on pure cow's milk till its second year, when the milk was reduced one third. The little fellow went to bed usually at four or five o'clock p.m., and very generally slept till next morning, when he awoke laughing. He is now sufficiently acute in his perceptions, and one of the most delightful tempered, yet spirited children we ever saw. We consider that one half of our city infants, who are born of healthy parents, die from being over-excited, over-exercised, and from bad milk and variety of indigestible food.

"The careless use of the cold bath is another fruitful outlet of infant life. A feeble child, whose indigestion is not sufficient to assimilate more than half the food that a healthy one would consume, is, in obedience to the absurd directions of an ignorant nurse, or some insane and ignorant water-cure empiric, forced into a cold bath for several minutes, often twice a day, and is taken out blue and speechless with loss of heat, and held in the nurse's or mother's lap, with rapid evaporation going on from the skin, in an apartment perhaps over-heated, and very leisurely dried and dressed. The dress is usually pinned so tight about the chest as to allow only a partial raising of the ribs, and not more than half enough air to enter the lungs, which are the source of heat. Or else, it is kept for a quarter of an hour in a bath of more than blood-heat, and becomes so relaxed and debilitated, that its skin is almost paralyzed, and its circulation so lowered, that its appetite and digestion are ruined, and lumps of food unacted on by the stomach appear in its stools.

"It is safer for every delicate infant to be washed and rinsed with a soft cloth and tepid water. The bath requires great care and judgment; a vast deal more than nine out of ten mothers possess. The nurse is for the most part an unprincipled eye-servant, and not to be trusted at all."

MICHIGAN FARMER.

ROBERT F. JOHNSTONE, EDITOR.

DETROIT. DEC., 1858.

The Close of the Volume and the Series.

The present number of the *MICHIGAN FARMER* closes the sixteenth volume and also ends the series, which was commenced in 1844. During the sixteen years which the sixteen volumes represent, there has been a vast change in the agriculture of the Peninsular State, and it is not too much to claim that those volumes have done much to promote that healthy progress which is being manifest in every section. Previous to the establishment of the *MICHIGAN FARMER* there were no manufactories of implements, and but little knowledge of the advantages which the best kinds afforded to those who used them in other States. There had been no importations of cattle or of horses and but little was known of the improvement which could be wrought by judicious crossing. The sheep were of little value for either fleece or carcass, and there was not a bushel of corn, nor a barrel of pork exported from the State. The greater part of Michigan was looked upon as a wilderness, too uninviting for the experienced agriculturist to risk his time or his capital. Now at the close of the series, we have only to repeat the words engraven on the arms of the State: "*circumspice.*"

The present editor of the *MICHIGAN FARMER*, has now been in charge of it for six years, and though conducting it part of the time under many disadvantages, amongst which the chief one was that it was almost thrust upon him, whilst a stranger to the great mass of its readers, somewhat unacquainted with their true interests, and whilst he was engaged in other pursuits, yet it has during those years steadily promoted a higher and better standard in every department of rural affairs, endeavoring on all occasions to correct false and mistaken views, and to point out the best methods, and practices, suitable to the locality and the climate.

During the past six years we have seen many changes. We have noted new lands made into farms and improved; we have known old neglected farms renovated and made worth more than they were originally; we have seen the highest priced stock brought into the State, which have left their mark here, and the benefits accruing from which have added largely to the public wealth. We know also that there is a better spirit abroad in relation to Agriculture, and its improvement, and we feel that in all this progressive advance of the people and the State we have borne our share, and taken active and useful part therein, and that the six last volumes of the *MONTHLY MICHIGAN FARMER* will prove a fair record of the agricultural progress of the Peninsular State.

That very progress which we have encouraged, together with the general advance in the productive interests of the State, renders it necessary that in commencing a new series of the *MICHIGAN FARMER*, it should take a new form, and itself take part in the progressive movement going on around it. Hence for the future it will visit its patrons every week, and we hope to have it welcomed not only by all its old friends but also by many new ones.

In the conduct of the *WEEKLY MICHIGAN FARMER*, we hope to be able to gather around us much of the talent and ability, that can be found to aid in developing still farther the capabilities of the soil and climate of Michigan, and to make a journal, which for the neatness of its execution and for the information it gives in relation to the *practice of farming, the culture and treatment of orchards, and fruit trees, its general, literary and scientific news, its miscellaneous reading, its treatment of household matters, and domestic economy, and its market reports*, will be unrivaled in its evenness to the wants of Michigan farmers and their families.

Wool and its prospects.

Are our farmers aware that wool in all its grades is looking up, and that prices are not only better now than at any time during the past year, but that they are gradually creeping upwards? If they do not know these facts it is time they did. Look at the New York importations of foreign wools how it has decreased. From the first of January to the first of November, 1857, the value of foreign wool imported was \$1,105,785, from the 1st of January 1858 to the 1st of November 58, the value of the foreign wool imported was only \$446,229; showing a decrease of nearly three-fifths. This decrease has not arisen from a want of demand, but because better markets were open abroad, and the manufacturers of other countries could afford from the demand, to pay better prices. This decrease in the foreign supply of course has left a vacancy to be supplied by our own wool, hence the active demand; and manufacturers are beginning to realize what the *MICHIGAN FARMER* told them and the wool growers last June—that the clip of wool for 1858, was not as large as it had been in previous years, and that in spite of their predictions to the contrary, prices must go up, and they have been going up every day since that time.

But there is another cause of the better rates now going. It is becoming plain that the production of wool does not keep up with the increase of the population that consumes it. The latest accounts from Great Britain exhibit an extreme activity among manufacturers, and the market reports show an increased firmness in the advanced prices arising from the great demand made by the manufacturers.

The market at Leicester, England, is thus quoted on the 29th of last October:

"Our season's demand may now be said to be fully on, and employment general. Though wools have attained the high price of about 42s per tod for farmers' lots, business in nearly all our branches has never been more healthy, orders being obliged to wait for execution, both in plain and fancy goods. Worsted spinners, to compete with the firmness of the wool market, have this week advanced yarns 1d per lb. We hear that the hands in the wrought hose and knit branches have turned out for an advance of wages."

The market at Bradford, Yorkshire, England is thus reported at the same date :

"In wool during the week the transactions have been very good. There has been an increased demand for all kinds of combing wool, and higher prices have been realized than for some weeks past. The supply of wools in the market, especially of the bright-haired class, is only limited. Nails and brokes are taken into consumption as made, at a shade better prices. In worsted yarns there is still considerable activity. The demand for home consumption continues unabated. But the export houses have not been free buyers for several weeks past. They have been expecting a decline in the prices of yarns, and have consequently refrained from operating. Instead of a decline, however, there is still an advance, in consequence of wool being dearer. The spinner, in self-defence, is obliged to demand higher rates for his productions, and the quotations are generally higher. In pieces there is rather less doing. There is not such a numerous attendance of merchants. Manufacturers are chiefly working to order. A further rise in the value of goods seems to be inevitable in consequence of the advance in price of the raw material."

The advance in the rate of foreign goods has set some of our own woolen manufacturers at work, and there is an evident improvement in the trade; this state of business at this season of the year, must have its effect on the next wool clip. For if the same activity continues amongst the manufacturers during the coming six months that there is now, the whole of last year's clip will be used up and the trade must come to a stand still for a want of raw material, which will be greatly enhanced in value. Hence the prospect of good prices for the next season's clip is becoming more certain every day, and we say to the readers of the *MICHIGAN FARMER*, take good care of your flocks this winter, and don't sell a sheep till after shearing time, if such sale can be avoided, and you have the feed to keep them.

Another reason why the production of wool does not keep pace with our population, may be given in the fact that as our population increases there is a better market for the meat, and the demand of the butcher tends to keep the flocks from increasing in numbers. Hence we note that there are less sheep in New England, New York, and Ohio in proportion to the population than there were ten years ago. In fact there were fewer sheep in the State of Ohio in 1857, than there were in 1853 and 1854, by one million and a half, although there was an increase of population during that time of at least one quarter

of a million. In New York the decrease has been still larger in proportion to the population. With these facts before us we have reason to believe that for several years to come, not only will the wool growing business be profitable, but the breeding and raising of fine woolled sheep will become more important and valuable than it has been for some years past. More especially will this be the case, should there be such an alteration of the tariff as would give the eastern manufacturers the least show of encouragement to resume operations, and attempt the manufacture of woollen cloths. At all events, we close for the present by saying, take good care of your flocks the present winter, and be sure and subscribe for the *WEEKLY FARMER* which will keep you posted so that you will not be so apt to become a spoil on which speculators can get fat.

Binders. Those who desire to bind up the present volume will find the title page and index in the present number. The binder will cut out the four pages from the centre and affix them at the commencement of the volume.

Clubs. Now is the Time to Make up Clubs and send them in.—Those who do not join with clubs should hand their subscriptions to the postmaster, who ought to transmit it forth with. The reception of the paper will be a receipt that the money is received by us, as no paper will be sent from the office except to prepaid subscribers.

Notes and Queries.

A Lost Horse.—It is with great regret that we learn that a very fine Suffolk horse, owned by F. S. Sibley, Esq., of this city, was lost overboard while on his passage from England to this country. The vessel on which the horse was shipped suffered severely from storms when off the coast, and during one of them, the horse was washed from the deck. This improved Suffolk horse, would have been found a fine cross on some of our light boned mares, and would have proved of great value to the State, as affording some excellent stock for farm purposes.

Herbert's Horse in America.—We take pleasure in calling attention to the advertisement of W. A. Townsend & Co., announcing a new edition of Wm. Henry Herbert's work on the Horse in America. This work ought to be in the hands of every person who is breeding horses, as its essays on the management of that noble animal in this country are the most complete and useful that have been issued from the press. The work also is excellent as a history of the horse, and affords by its tables of pedigrees, ample information relative to the stock which we have bred amongst us, and also of the many varieties that are to be found in the several States. We will receive orders for this work, and forward them promptly.

Scotch Plows and Harrows.—Mr. William Hunter and a gentleman recently from Scotland, and an experienced implement maker have recently gone into partnership, and commenced the making of wrought iron Scotch plows and harrows at Northville, in this county. Mr. Hunter himself is a skillful workman, and has been farming for a considerable time in this country, and is therefore well acquainted with the kind of implements, and the modifications needed for our modes of cultivation, and he will therefore be apt to get up plows and harrows well adapted for the best kinds of work.

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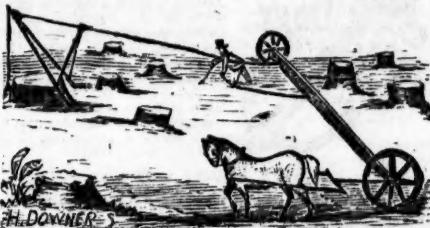
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